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AL PALEY

Entrance gates of Renwick Gallery's Museum Shop, photo credit: Grey Crawford

RECENT WORKS IN METAL BY ALBERT PALEY
BY MICHAEL MONROE

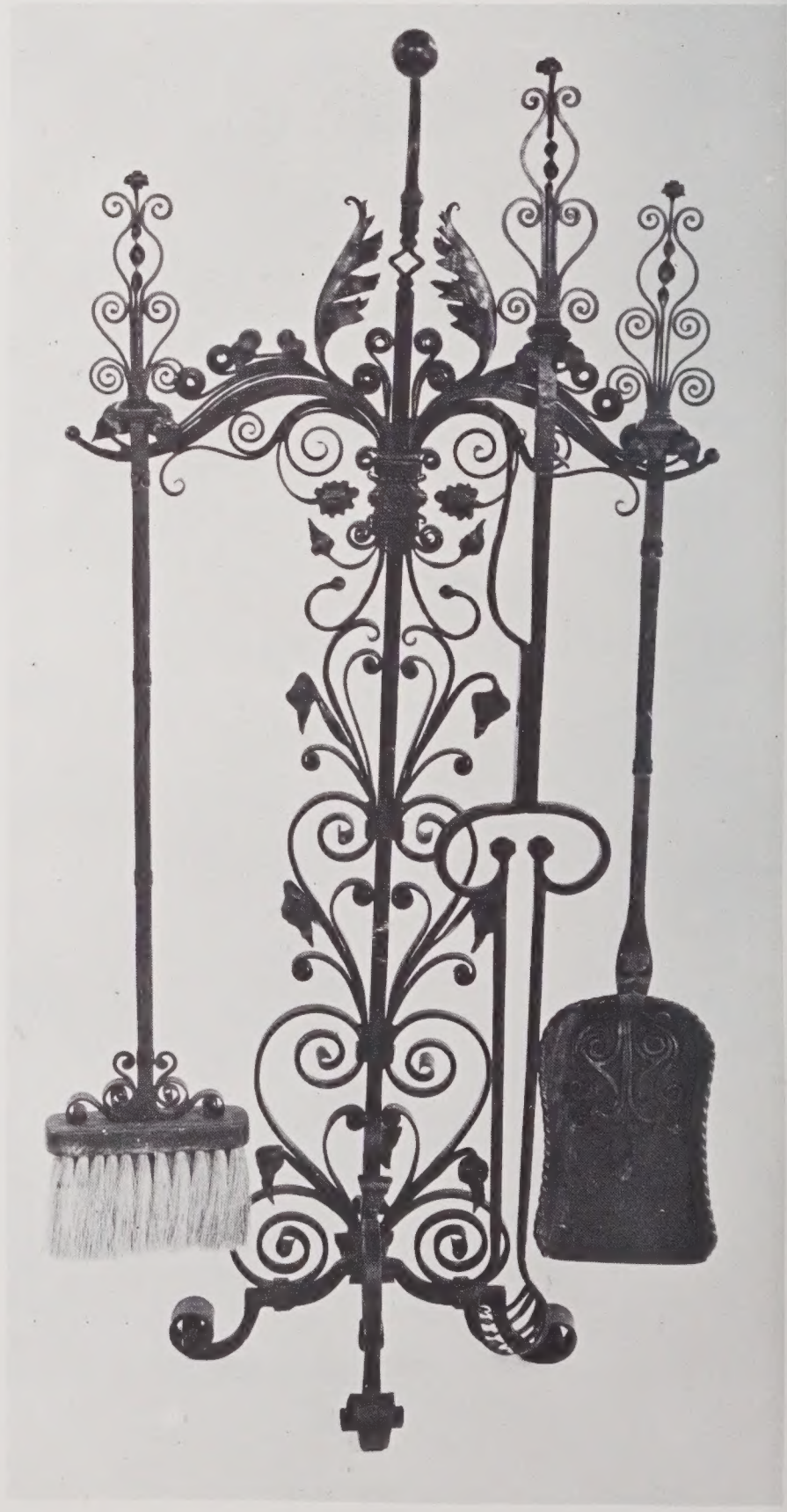
Albert Paley, photo credit: Grey Crawford

Sensuous, curves, flowing and whiplash forms characterize the handsome forged steel, brass and bronze gates at the entrance to the Renwick Gallery's Museum Shop. In April of 1974, Lloyd Herman, Director of the Renwick, invited several of the country's foremost craftsmen in metal to submit sketches for the gates. Paley's design was selected and the Renwick gates became his first important architectual commission. Seven months in the making, the 1,200 pound gates represent 3,800 man-hours of working time on the part of Paley and his assistant, Richard Palmer. The gates were installed in early 1976.

For his gate design, Paley has been honored with the Design in Steel Award for craftsmanship from the American Iron and Steel Institute.

In addition to the permanently installed gates several other pieces of Paley's work make up the temporary portion of the exhibit and include such diverse items as a twisting and swirling eight foot high torchere and a stainless steel, brass, rosewood and delrin dicing knife. His "Lectern" is a departure from conventional design using a single band of wrought iron rising vertically from a coiled position on the floor to support and enclose a series of horizontal brass bars of varying thicknesses. Looking through his glass topped "Dining Table" one sees a pattern of beautifully controlled writhing curves of wrought iron that form the stable base. In addition to the works in iron are a series of pins, brooches, and neckpieces. Of these, perhaps his most interesting piece is the forged and fabricated silver and gold "Pin No. 120". Positioned to the extreme right side on a large ellipse of silver is an apparatus consisting of a rotating wheel so mounted that its axis can turn freely in certain directions and is capable of maintaining the same absolute direction in space despite the body movements of the wearer.

IRON, SOLID WROUGHT/USA
BY MICHAEL MONROE



Daniel Boone VI, "Fireplace Set", wrought iron, 41"

Iron, Solid Wrought/USA, celebrates the blacksmith as artist and craftsman in the United States, 1776-1976. The University Museum and the Art Galleries, Southern Illinois University at Carbondale, organized the show "to examine both the past and present state of blacksmithing in this country,

Michael Reigel, "1976 Commemorative Clockwork Toy", brass, mild steel, 6½x3¼x4½"

Grant Wood, "Fireplace Screen, ca. 1930", mild steel, 50½x21"

G. von Brecht, "Bicycle, 1854", painted wood, brass, wrought iron, 50x68"

to compare the two, and to provide an opportunity for valid assessment of the art and craft as practiced by Americans". It includes objects submitted by contemporary craftsmen at the invitation of the organizer, other contemporary works chosen from a national competition, and historical examples of the blacksmith's art.

Created by an unknown blacksmith, is a not-so-ordinary bicycle that dates from 1854. A two-wheeler, it is joined by swirls of iron and topped by an iron seat. The combination of slender wagon wheels, gracefully bent iron ribbons, hand wrought bolts and spool-like pedals make for a highly refined design.

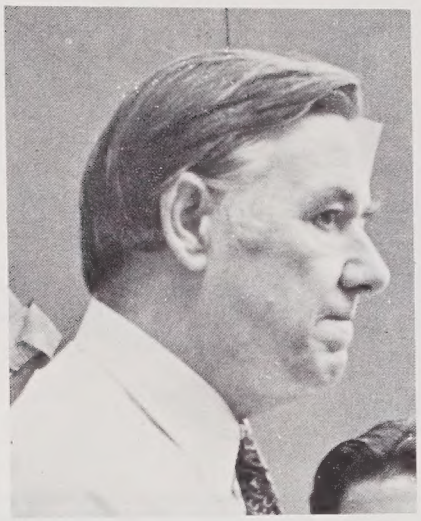
Donn Williams', "Ceremonial Rattle", made of mild steel, amber, horsehair and Liza Littlefield's "Lion Prince Puppet", made of mild steel, plexiglass, brass, wood and hair represent directions of blacksmiths who include diverse and disparate materials in their work.

"Sled I", by James Wallace is an elegant and sleek object that appears to be in motion even when still. Michael Reigel's "1976 Commemorative Clockwork Toy" grotesquely springs to life with a twist of a gargoyle headed key. A half-human, half-animal form dances madly on the box top while another partially submerged beast devoures the tail of the dancer.

Bruce LePage's, "Butcher's Block" is a successful combination of grace, strength, and stability. Holding the wood block securely, the four legs gently taper outwards and stand ready to accept the heaviest blows of the cleaver. A delicate open feeling is achieved in the floral motifs used by Grant Wood in his "Fireplace Screen" made in about 1930.

David LaPlantz's, "Skippy Peanut Butter Spreader", combines mild steel, brass and copper into a marvelous knife that fits the hand beautifully and includes a handy recessed portion for the thumb . . . all guaranteed to convert the user to an addiction for peanut butter.

Bruce LePage, "Butcher's Block", mild steel, wood, 35 x 20½ x 28½

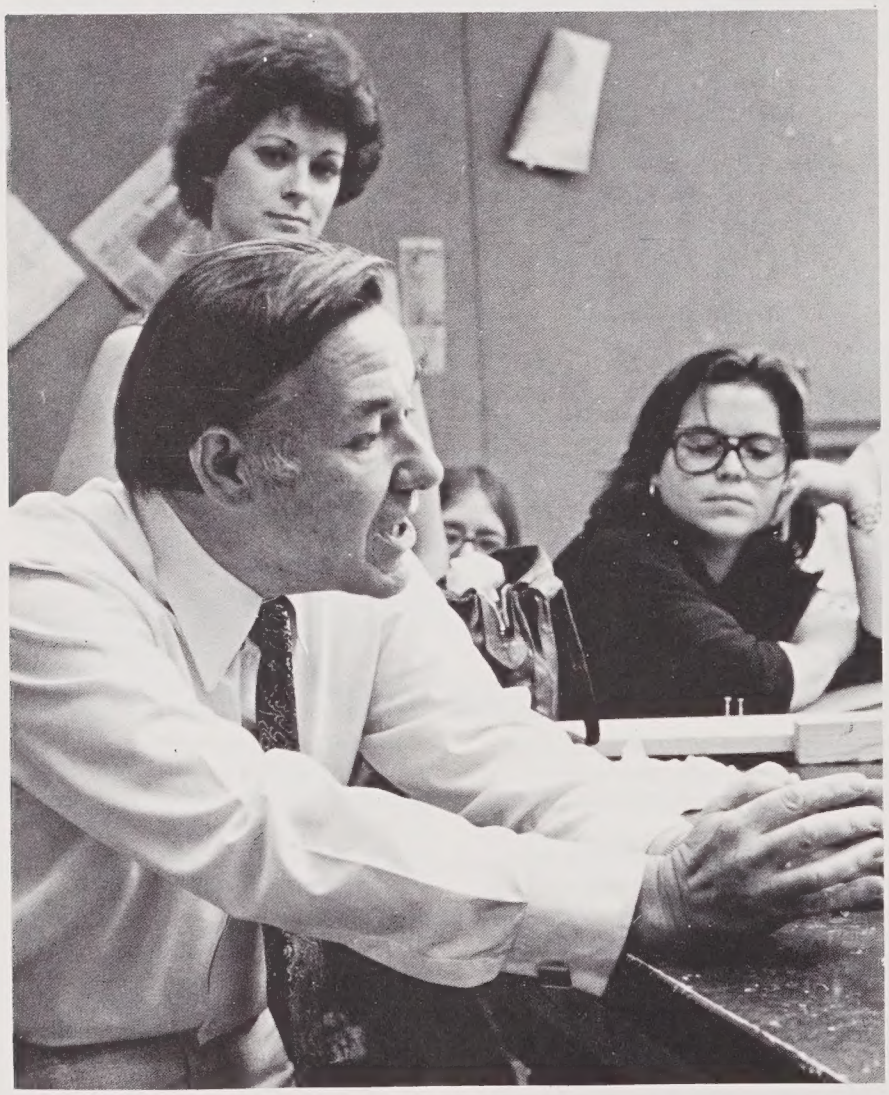


Peter Gainsbury
photo by Barbara Stonikinis

THE LONGWOOD/GAINSBURY CONFERENCE

by Mary LaPrade

On September 21-22, 1977, Longwood College sponsored a workshop which approximately 50 people attended. Professors and students from several colleges in Va. and N.C.



left to right: Peter Gainsbury and students photo by Barbara Stonikinis

were also invited. Schools which participated included: Virginia Commonwealth University, Old Dominion University, Madison and Hayward Technical Institute. Other representatives (outside the field of academics) who took part in the conference were some commercial jewelers from Va. The interaction between these factions proved to be stimulating for both sides.

The first day's program beginning at noon on Wednesday, featured several of the instructors and slides. Ron Wyancko of Madison, used the opportunity to reflect on the stages of development that his work had undergone. The slides of his early pieces showed a strong interest in Indian jewelry; however, later he turned toward the use of spicular forms. At present, he is experimenting with plexiglass, reticulated metal and cold joints, and noted that this is "a trend away from symmetry into organic form". Yet, he also pointed out, "I have always had a leaning towards symmetry and have been fighting to get away from that, but maybe that is not what I should do."

The next speaker was Diane Porzel, the instructor at Old Dominion, who explained the effect of animal forms; in particular, sealife on her metalsmithing. She admitted that after an unsuccessful break from these designs, she "gave up" and let them "dominate her work". According to Mrs. Porzel there are "always some critters in the house" and that she spends her "vacations in swamps". The slides of cast octopi rings, an alligator keycase, a chased turtle box, a dragon meat cleaver and protozoa-like tea strainers seemed to verify her statements.

left to right: Lynn Yeatts, Ron Wyancko and Arch Gregor, with students

John Satterfield from East Caroline U. related some of his experiences in the Army, a printing business and the Peace Corps as his introduction into the field of crafts. Speaking of his first contact with metal, he said, "I never felt as comfortable in any other media . . . and am still in that dilemna". In addition to slides of such pieces as "Frolicsome Finialed Fetish", he also had a film. In it, Satterfield demonstratrated how he worked in the process of lost-wax casting. His main concern at the moment is trying to "bridge the gap between organic shape and hard form so that there is a relationship between hard and soft edge".

Next, Arch Gregor spoke about the two-year (7 semester) crafts program in production at the new Hayward Technical Institute (Clyde, N.C.) which prepares students to be self-sufficient when they graduate. For the fee of $39 per semester (in-state students) some of the courses offered are: blacksmithing, toolmaking, enameling, plastics, photo-etching, and raising.

Following a short break, the group reassembled for an informal discussion among the participants. Joe Callaway, a jeweler from Blacksburg, Va., spoke of "the practical end of jewelry". "Basically jewelry is work . . . and you do anything in the world to make your shop successful". He suggested function as being a key element in design. "Do something over and over until you can knock them out". Mr. Callaway displayed some of his work done in his shop. He noted the low emphasis on repair and said that it should be taught to students. Another Virginia jeweler, Joyce Gray, told of her experiences in doing repair and one-of-a-kind pieces for customers. Peter Gainsbury of London interjected the idea that English schools have more of a relationship with the individual in teaching design and placed more stress on teaching production techniques than American schools. "American schools don't teach design". Much response resulted as the instructors and the commercial jewelers debated over the problems of efficiency vs. aesthetic values. The statement was made by John Satterfield that "the American public is not as sophisticated as the European, the reason being Europe's longer history of development." A proposal which found agreement was that the elevation of the American public toward design was necessary. Another question brought up was, "does the person wear the jewelry OR the jewelry wear the person?"

Conference participants

LONGWOOD/GAINSBURY CONFERENCE

THE ELEMENTS, NEW YORK
Gallery for Fine Contemporary Crafts
N.Y., N.Y., 10021

The second portion of Wednesday's program featured Peter Gainsbury, the Director of Research at the Worshipful Company of Goldsmiths in London. The history of the livery company was briefly sketched and Mr. Gainsbury noted that this year marks the 650th anniversary since the granting of the royal charter in 1327. There are three grades of membership the lowest being the freeman, next the livery, then the court (or governing body) with a Prime Warden as the head. Political functions of the Company are the election of sheriffs and Lord Mayor. Other functions of the Company include: hallmarking, being the trustees of charities, binding apprentices to trade, a trial of the Pyx (to check the coinage), sponsoring 18 schools for silversmithing, providing a 15th century library-archives for study, and giving technical assistance. Furthermore, the Company keeps an index of craftsmen, encourages the craft of commissioning silver, has constant exhibits or the loaning of them, and sponsors one-man shows in Goldsmiths Hall or special exhibitions such as "Loot" for young people. The Company owns one of the best collections in the world of modern jewelry since 1951, and of antique and modern silver.

In particular, Mr. Gainsbury mentioned that four months after graduation from one of the Company's schools, the student is employed in a factory as a manager's assistant to be exposed to the problems of factory work. After showing slides from the Company's collection of silver, Mr. Gainsbury elaborated on some of the technical reports available — concerning areas such as electroforming and titanium. In speaking of the difference between American and British techniques, he commented, "Stanley Lechtzin does not electroform. He's much too clever than that. He is an electrocreater".

The next part of the program was a special film about SNAG which explained the organization, its history and functions. The final speaker for the evening was James Meyer of Va. Commonwealth University. He gave a slide presentation of his work which included cast rings of various golds, a liqueur set and a meat chopper. That night a party was held at the Longwood Alumni House for SNAG members, immediately after the end of the program.

On Thursday, the participants met at the Va. Museum in Richmond at 10 a.m. for a special tour of the Salvador Dali, Peter Karl Faberge and Art Nouveau collections. After touring the exhibits, the group broke up to pursue individual interests. Some chose to remain in the gallery; others went to see the metalsmithing studio at Va. Commonwealth University. This concluded the two-day conference.

left to right:
students and Joe Callaway

The Elements Gallery for Contemporary Crafts of Greenwich, Conn., has come to 766 Madison Ave., N.Y. "The Grand Opening Show" displayed for New Yorkers the caliber of artists and exhibitions scheduled for the near future.

Represented in this first mixed-media invitational exhibition are many of this country's most highly regarded artists. Their work in clay, glass, fiber, jewelry, and wood has that rare aesthetic quality which touches an inner chord of appreciation and lifts it into the realm of art.

Relegated since the mid-eighteenth century to a subordinate role, the crafts have begun, in recent years, to emerge from a minor arts category. Today's craftsperson is an artist, no longer stereotyped. Visionary, humorous or serious, functional or sculptural, works by fine craft artists can now be evaluated on an equal basis with sculpture or painting on canvas. Reflecting the new humanistic momentum, these unique objects integrate art with life, enhance our everyday existence, and are worthy of serious attention by collectors.

In this opening New York show, rugged and poetic ceramic works in the raku technique provide eloquent contrast to fine-walled translucent procelains with relief-carved designs. Tall, slender cobalt blue goblets share the spotlight with elegant glass platters and shimmering glass sculptural works. Unique earrings in sets of three, massive architectonic neckpieces and bracelets which incorporate poems will delight sophisticated art buffs. Contemporary masterworks of turquoise and coral, set in silver by native American silversmiths have come a long way from the traditional designs so often copied by lesser artisans.

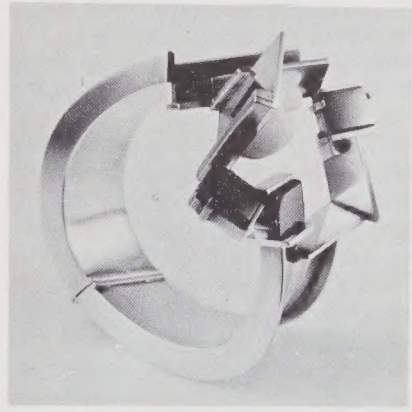
Kiff Slemmons of upper New York State has sent a magnificent neckpiece, gused and fabricated which combines, in abacus fashion, horizontal rows of pre-Columbian stone and jade beads with sterling silver.

Correen Kaufman's gold and silver pendants and rings in cloisonne enamel are in a landscape theme. With a new technique developed by this Calif. artist, enamelled copper bowls are decorated in a drawing technique, overlaying a wash resembling watercolor.

The Elements Gallery was founded 4 years ago. A long-unused livery stable in the central business area of Greenwich, Conn. was discovered and refurbished to house the finest and most extensive collection of craft objects to be seen in the Northeast. Under the guidance of Kay Eddy, a painter, whose enthusiasm for the current renaissance of crafts began with her collection of American Indian jewelry, their scope has enlarged to present exhibitions such as "Art For Eating", "American Porcelain", "The New Age of Enamels" "Let's Drink to It!" and "American Art Couture".

Encouraged by enthusiastic reviews in major news media and accolades from their Connecticut and Westchester fans, the owners decided to brave the retail market of upper Madison Avenue in order to bring attention to the arti objects created by some 300 artists from all parts of the U.S.

Gallery hours are Mon.-Sat., 10 a.m. to 5:30 p.m.



Helen Shirk, Bracelet, silver, brass, copper, onyx, delrin
"Grand Opening Show"

TREASURES OF IRISH ART
1500 B.C. to 1500 A.D.
Metropolitan Museum of Art,
New York City

by CAROLYN J. SEIFERT

Ardagh Chalice, silver, bronze, gold and crystal, 8th Century

The current exhibition at the Metropolitan Museum of Art entitled "Treasures of Irish Art 1500 B.C. to 1500 A.D.," contains metalwork and manuscript painting from the collections of the National Museum of Ireland, the Royal Irish Academy, and Trinity College, Dublin. Seen for the first time in the U.S., the collection includes almost all of the extant examples of Early Irish Art. Arranged in five groups to parallel the five periods of Irish history (the Bronze Age, pagan Celtic, Early Christian, Hiberno-Viking, and Late Medieval) the works illustrate both the development of native Irish decorative motifs and metalworking techniques, and its continual enrichment through the absorption and synthesis of ornamental styles, techniques, and forms received through the trade, conversion, and invasion of the Romans, Celts, Christian monks, and Vikings. For the art historian and contemporary metalsmith, the exhibition is not only a visual history of metalworking techniques, but a demonstration of the variety of forms achieved through the ingenuity of the Irish metalworker.

During the Bronze Age, c 2000 B.C., a group of settlers, different from the native Neolithic farmers, came to Ireland. Bringing with them the technology of metalwork, they discovered and mined deposits of copper and gold, with the result that Ireland became a wealthy center of trade and manufacture for Europe and the Near East. The gold personal ornaments in the exhibition attest to the material prosperity and artistic genius of these Bronze Age inhabitants. Utilizing geometric and abstract patterns, the metalsmith created functional forms in which there is both order and endless variety. Two "lock rings" which may have been hair ornaments, are in the form of biconical faceplates which at first glance appear to be engraved with concentric rings, but are actually composed of concentrically placed gold wires. The result is an inseparatibility of technique and design. Among the neckpieces, in particular, we find a great deal of variety in form and goldsmithing technique. The simplicity of a *lunula*, a half-moon shape made of a thinly hammered sheet of gold edged with incised triangles, can be contrasted to the more complicated gorget, a crescent-shaped sheet of gold with a disc attached to either end, which is decorated with a combination of incised concentric circles and raised bosses. The majority of the neckpieces from this period are in the form of torcs, in which different techniques are employed to give variety to this simple form. In one example a wide strap of beaten gold is twisted to give the effect of twisted ribbon, while in another instance a four-flanged bar is closely twisted for a thinner, more delicate form.

It was the Celts, called Keltoi by the Romans, who made the first foreign contribution to the decorative and technical repertory of the Irish metalworker. Referred to as the "La Tene" culture, the Celts originated and flourished in the Rhine valley in the 5th-3rd century B.C. Under their military expansion, their influence spread all over Europe, although the effects of the La Tene culture are not seen in Ireland until the 3rd-1st century B.C. Organized on the concept of sacred kingship, Celtic chieftains engaged in intertribal warfare, but artists were free to move from tribe to tribe. The Broighter torc is an example of Celtic decoration, in which interlocking curves terminating in spiral motifs characterize the dynamic, organic, yet abstract, qualities of the La Tene style. This spiral motif is found again on a bronze curved trumpet (1st Century A.D.) in which the compressed and expanded spiral forms echo the shape of the instrument. In addition to enriching the native decorative vocabulary, the Celts, through their contact with the Romans, introduced the techniques of enamel work and *millefiori*, and a form of fibula, the penannular brooch, to Ireland.

In the fifth century, St. Patrick began the conversion of the Celts to Christianity, and the eventual synthesis of native Irish-Celtic artistic traditions into the service of the Church, resulting in Hiberno-Saxon art. The Irish monks established independent, autonomous monasteries which became not only the economic and social centers of Irish society, but the most important patrons of art. The Church required illuminated manuscripts for conversion and teaching, liturgical objects, such as patens and chalices, for the Mass, and, finally, reliquaries for the relics of these early saints. The demand for these products was met by native metalsmiths, both lay and clerical, whose artistic traditions derived from pagan (Roman-Celtic) sources. Hiberno-Saxon metalwork of the late seventh century illustrates the wide range of experimentation, absorption, and synthesis of external design and technical influences that resulted in the "Golden Age" of Irish art. La Tene spirals are still present, but they have been transformed into curvilinear forms that interlock in interlace patterns that often consist of biting animals (lacertine). In addition to these organic forms, there is a consistent use of geometric designs. During this period a new technique of relief casting, referred to as *kerbschnitt*, or "chip carving," was introduced.

Torque, gold, 1st Century B.C.

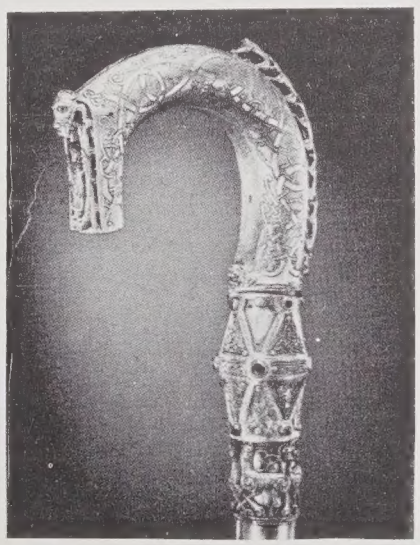
FOURTH ANNIVERSARY EXHIBIT
The Craftsman's Gallery, Scarsdale, N.Y., Sept. 17-Oct. 22, 1977

by Sybil Robins

The faceted and angular metal produced surfaces derived ultimately from work on wood or bone that was developed in the North Sea area in Roman times and brought to England and Scotland with the Anglo-Saxon migrations. Further development in enamelling occurs in the use of yellow, as well as red, while both *champleve* and *cloisonne* were used to produce geometric designs. Usually, several techniques were combined to create a variety of textures, such as delicate engraving against a stippled or punched background, inlays of goldwork and bronze, and filigree, which added glitter to the surface. All of these techniques and designs are found on the Ardaugh chalice (early 8th cen.). In this chalice a wide range of materials (silver, bronze, gold, glass, and rock crystal) are combined by a variety of techniques (engraving, kerbschnitt, filigree, granulation, enamelling). Large, plain areas of silver, articulated only by a delicate inscription and stippling, are contrasted to the more plastic decoration of filigreed interlace, geometric enamels, and *kerbschnitt*, confined to the smaller areas of the handles, lip, and foot stem. The result is a combination of contrasting materials, textures, colors, and designs held in a delicate equilibrium by the tension created between decorated and undecorated areas.

Although the manuscripts of the exhibition are isolated in their special cases, there are obvious esthetic parallels between, in particular, Hiberno-Saxon metalwork and painting. In the *Book of Durrow* (mid-7th cen.), the meticulous outline drawings are carefully filled with yellow, red, and green, analogous to the effects of engraving, filigree, and enamelwork achieved in contemporary Hiberno-Saxon metalwork. Since both the metalsmith and manuscript illuminator are working in a miniature scale, the result is a common technical precision, and, therefore, visual intricacy.

This production of manuscripts and metalwork in the monastic centers was terminated at the end of the 8th century by Scandinavian invaders from the North. The Vikings not only plundered and looted monastic treasuries, but destroyed workshops as well. More importantly, they were responsible for a change of taste in Ireland. Sea traders, as well as pirates, they opened Ireland to foreign influences, while, at the same time, contributing their own Scandinavian sources. Irish decoration was enriched by Scandinavian ornamental styles, such as the Jellinge animal style (disjointed ribbon beasts) in the 10th cen., and later, in the 11th cen., by the Ringerlike style (animal and vegetable motifs in free-ended intertwining), and the Urnes style, in which the basic motif is a quadruped enclosed by a writhing, wiry serpent. In this period there is also an increase in the use of silver, one of the commodities that passed through Ireland when it was used as a sea trading base by the Vikings. In the exhibition, several silver brooches reflect the Viking impact on the decoration and forms of Irish metalwork. The decoration of several penannular brooches illustrates the elaboration of native Irish spirals and interlace by the absorption of the Scandinavian biting animal motifs. The polychromed effects of enamelling, filigree, and gilting, characteristic of 8th century Irish metalwork, are replaced in the 10th century by the use of plain silver. In contrast to the elaborate decoration of these brooches, is the relative austerity of the "thistle" brooches. Common in the 10th century, the fully developed form is penannular with spherical brambled terminals, or "thistles"; while the head of the pin, also spherical, often has a flattened top with geometric ornament. The uncluttered lines and simple forms of these pins make them esthetically pleasing to the contemporary viewer.



Abbot's Crozier, bronze and silver

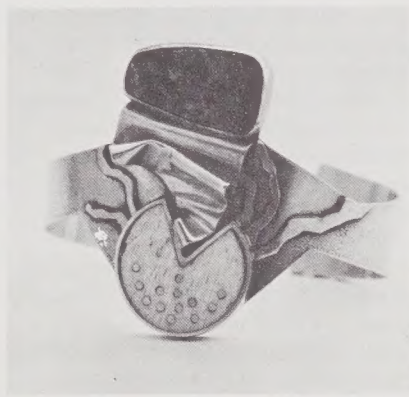
By the end of the 11th century Scandinavian elements had been integrated into Irish art, and the peaceful times that followed the Viking invasion resulted in a prolific production of metalwork. Unlike the earlier Christian period, most of these works are made by professional craftsmen, not monks. The names of the artists, Sitric Mae Maec Aedo, Nectan, Inmainen, and Maelisu MacBratdon U Echan are known from the inscriptions on their surviving work, an indication that metalwork was no longer monopolized by monastic centers. Irish craftsmen of this period employ all the traditional methods and motifs with a few novelties. Bronze again became the basic metal, its importance attested by the recent excavation of a bronzework workshop in Dublin. The bulk of the extant metalwork from the Romanesque and Gothis periods is in the form of reliquaries, of which the shrine reliquary for St. Patrick's bell (c. 1100) is an example. The box is made of bronze plates; each side is surmounted with either openwork or cast interlace. The silver openwork on the back of the shrine is a design of interlocked swastikas, which, when laid against the bronze, the negative spaces become a pattern of interlocking crosses. After the Anglo-Norman invasion of 1169-1170, however, the Irish style, the result of a combination of native and foreign styles and techniques, becomes extinct. Although the invaders employ and value the Irish craftsmen, after 1300 their work is overshadowed by artistic developments in England and on the continent. While the processional cross of Lislaughtin (late 15th cen.) is technically superb, the vitality of the earlier centuries is gone.

After the exhibition closes at the Metropolitan Museum on Jan. 22, 1978, it will travel to the Fine Arts Museum of San Francisco; M.H. de Young Memorial Museum; Museum of Art, Carnegie Institute, Pittsburgh; Museum of Fine Arts, Boston; and the Philadelphia Museum of Art.

Metalsmithing was represented in this exhibit with fantasy jewelry structures by Andrea Dion. Educated at the Massachusetts College of Art, Ms. Dion has worked as a designer for the commercial jewelry industry and taught at the DeCordova Museum School.

Ms. Dion's work stems from an inherent love of materials and a fascination for working with them in new and creative ways. Her constructed compositions include selections from such elements as mastodon ivory, dolphin's tooth, jasper, biwa pearl, andalusite, citrine, boulder opal, sphene, peridot, rutilated quartz, Chatham emerald, garnet and other semi-precious stones in harmonious balance with silver, copper and/or brass.

Dion's interest in the juxtaposition of materials is expressed in a bracelet of sharply angular sterling, surmounted by loosely convoluted folds of metal and inlays of boulder opal and bone. (photo) Her whimsy emerges in a massive brass bracelet, "Circe's Amulet", contrasting heavy geometric form with delicately curlicued metal embellishment.



Andrea Dion, sterling bracelet, with boulder opal and bone insets, fabricated, hammered, etched and inlaid.

"METALMORPHOSIS"
The Gallery, Peters Valley Craftsmen,
Layton, N.J., 07851
Aug. 20-Sept. 11, 1977

by Pahaka

Tucked away in the rolling hills of Northwestern N.J. lies the village of Peters Valley. Under the jurisdiction of the National Parks Service, Peters Valley has residencies, interns, visiting professionals, workshops, studios, a store selling the work of juried members and a gallery. The latter presents a series of high quality exhibitions throughout the year. "Metalmorphosis", Aug. 20-Sept. 11, featured six people using metal. To benefit "non-viewers" of the exhibit, included is a statement by each participant and a description of the work.

SUSAN COHAN: "My work is an extension of self, a personal statement of who I (as a woman) am and how I perceive my world. Imagery is the primary interest and the images I use are feminine. They are a celebration of life as I view it."

There are several series shown including "Changing Consciousness" pendants, "Sperm" pendants, and "Landscape Series" brooches. Materials in the 15 pieces shown included sterling, 14k gold, copper, bronze, pearls, ivory, stones, paper, and acrylic. The statements were bold, most were matte finished or oxidized to achieve different hues. Roman chains were constructed for some pieces and the use of niello provided contrast in others. The pieces seem to reflect a pleasure gained by employing the use of detailed constructions.

GLEN GARDNER: "The contrast between the crisp polished lines of a steel knife and the spontaneous, crude if you will, form of a copper brazed container echo similar contrasts within myself."

Glen combines inventiveness with a sense of humor and arrives at a personal point of view. Items shown included choppers, knives, containers, belt buckles, an inlaid pendant, a spatula, a studio sign, and a weathervane. Using mild steel, high carbon steel, iron, damascus, 14k gold, 22k gold, sterling, brass, copper, and rosewood, contemporary methods of blacksmithing have been explored. The functional pieces work and the decorative ones are unlikely but perfectly compatible combinations. Golds that are inlaid in iron and steel emerge comfortably from rough borders of black and gray and both say "I am metal."

ULLE LEPASAAR: "The primary focus of my work is color. . .Although my compositions are mostly abstract, I feel a spiritual and aesthetic kinship with the medieval manuscript illuminators and their sense of rich color and exquisite detail."

The metalwork is basic and simple allowing the eye to be down to the subtleness and perfection of the colored stone inlay. The materials inlayed in sterling and 14k gold are turquoise, lapis lazuli, chrysaeolla, corals, jet, malachite, serpentine, stellurite, pink conch, mellon, quahog, and assorted cone shells. Many are used in American Indian jewelry yet here there wasn't even a hint of similarity. You cease to realize where one stone ends and another begins because she works with subtle relationships rather than contrast. They almost have a quality imaginable only in the finest metals.

GAYLE SAUNDERS: "In my new work I am concerned with making patterns that define, accentuate and play with form. . .patterns that are in flowers, shells, fish, insects, the eyes, the skin, the imagination."

Gayle focuses on the metal surfaces and achieves a "marriage of metals" effect with silvers and colored golds that is the result of an experimental lamination type process. A careful combination of metal colors and shapes achieves an intricate patterned richness that rivals nature. Most pieces were rounded or curved and very smooth, all graceful and wearable. Her style is easily recognizable, each piece a highly refined form relaxed to the next, but able to stand alone as a Gayle Saunders.

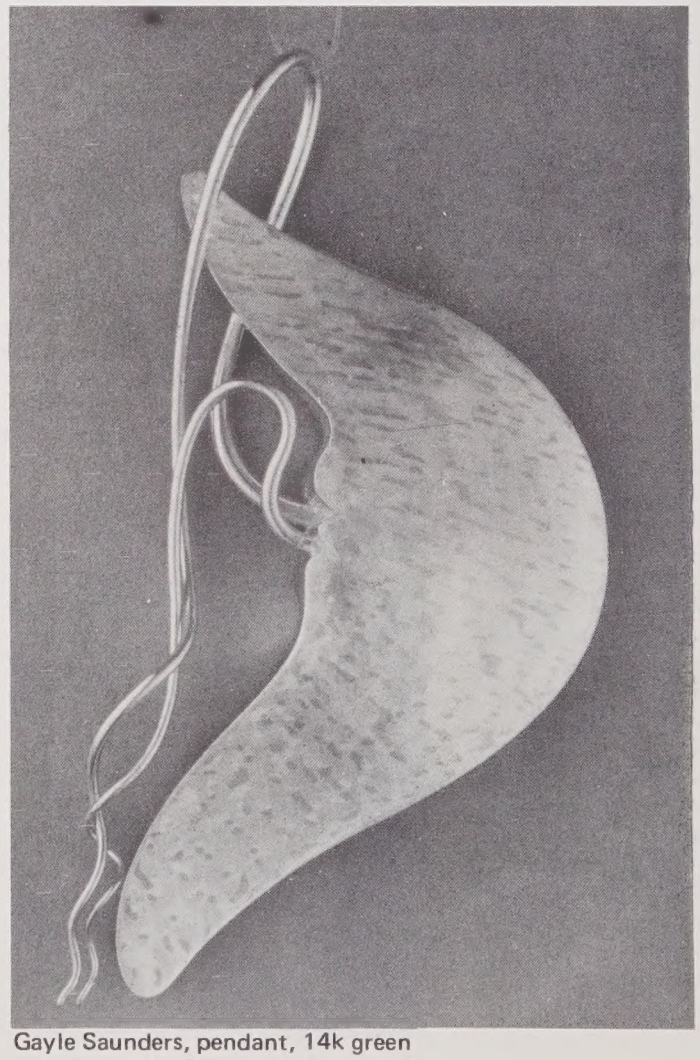
SUSAN LANGE: "Metal is the means of transferring my visions onto paper. After etching on the metal plate, I fill the lines and surfaces with different colors of ink. Both the shape of the metal plate and the images on its interior surface are transferred onto paper, creating a multi-dimensional impression full of life and light."

Five framed etchings were shown together with the copper plates used in printing. The series named "Encounter with Edges." consisted of anatomical studies that were in limited editions of 20. The edges of the copper plates were sawed out in coordination with the subject matter, allowing the print to take on another dimension than that offered by a square plate. It was visually valuable to view the metal together with the finished image for a clearer understanding of the process.

THOMAS MANN: "Metal has become my palette of colors from which I build and construct my jewelry. I am a collegiate. Whatever materials in combination with metal will create the feeling I wish to express, I use."

Exhibited were six adventurous undertakings combining copper, silver, bronze, aluminum, brass, sawed coins, found objects, plastics, electronic parts, paint, paper and tin types. While many techniques were capably applied, the elements seemed randomly integrated and visually derivative of other well-known goldsmith's work. The work would benefit from a stronger personal style especially since it is done so ambitiously. Careful thought was given to the presentation which allowed the jewelry to be displayed as wall sculpture. Five pieces and a group of six winged hearts were displayed inside constructed frames also available for purchase.

SUSAN LANGE/THOMAS MANN—COLLABORATIVE WORK: Framed in rectangular shaped unlockable showcases were a print and a piece of jewelry made from the same piece of metal. Tom designs the shape of the metal which tends to be symmetrical. Susan etches the surface and prints with it. Tom adds stones and other elements while constructing a finished piece of jewelry, usually a large pendant. Seven collaborative efforts were exhibited, successful both as decorative and ornamental presentations.



Gayle Saunders, pendant, 14k green and pink golds, 18k yellow gold and sterling silver, 5x2½"

SILVER FOR THE GODS
800 Years of Greek and Roman Silver

"Silver For the Gods" was held at the Toledo Museum of Art from Oct. 8-Nov. 20. This first international loan exhibition of Greek and Roman silver included an impressive array of over 120 silver objects from the 6th century B.C. to the 4th century A.D.

One of the objects displayed was a silver bowl about 5" in diameter which dated from 150-100 B.C. The intricate floral decoration and rich guilding on this cup made it one of the most elaborate drinking vessels from the period of Greek culture dominated by Alexander the Great.

From the mid-first century B.C., the Tivoli Horad of Silver included 30 objects of silver from a Roman silver service. These pieces are now at the Metropolitan Museum of Art, New York.

In 1868, German soldiers near the town of Hildesheim uncovered one of the finest known sets of Roman silver. A silver cup dating from the early first century A.D. is one of the key pieces from this noted treasure. It is richly decorated in relief with ribbons and garlands on a gilded background.

Silver Cup, length 9¾", lent by Staatliche Museen, West Berlin.

SILVER FOR THE GODS

The Tivoli Hoard of Silver

Silver Helmet

Silver Bowl, 150-100 B.C., diameter 5"

Sandra Parmer Zilker, "Armored Neck Halo with Bi-Color Connectives", neckpiece of sterling silver, plexiglass, plastic tubing, amethyst, moonstone, coral.

WEST OF THE MISSISSIPPI
by Sybil Robins

"West of the Mississippi" at the Craftsmen's Gallery, Scarsdale, N.Y. (7/21-8/27) brought a sampling of the wide variety of materials, styles and techniques being explored by western craft artists in all media to an eastern audience.

Michael Croft, "Bonk Knob", container, champleve enamel over copper with silver and pewter, 3½" high.

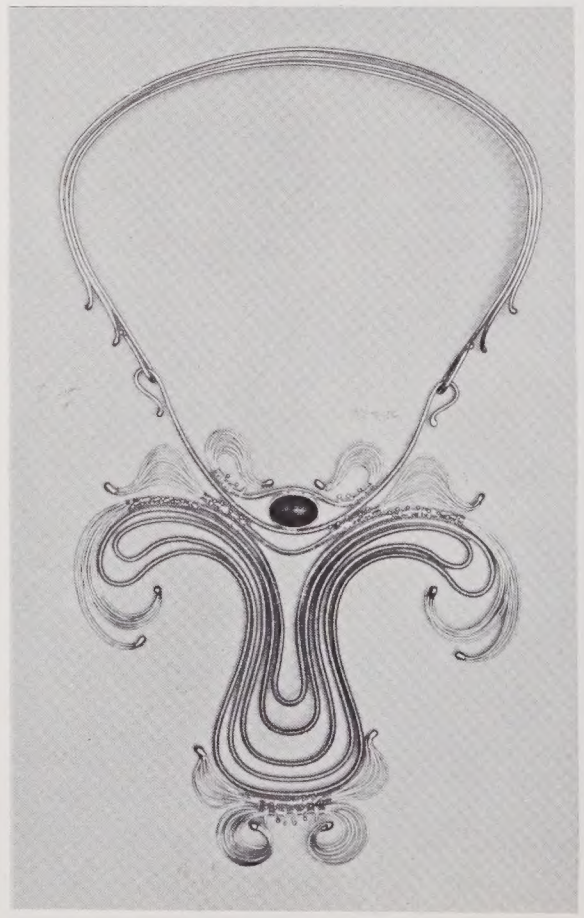
Charles Loloma holding works that were exhibited in WEST OF THE MISSISSIPPI, photo credit-Jerry D. Jacka.

THE PHILADELPHIA CRAFT SHOW
(information supplied by the Women's Committee of the Philadelphia Museum of Art)

"The Philadelphia Craft Show" at Memorial Hall from Nov. 4-6, sponsored by the Women's Committee of the Philadelphia Museum of Art, brought together the varied work of close to 200 craftsmen from across the nation. Objects on display included ceramics, glassware, weavings and fiber art, jewelry, and furniture. The nationally

Mary Lee Hu, "Neckpiece No. 24", fine and sterling silver, Burmese jade, 10½"x6¼"x½"

Brent Kington, weathervane, forged mild steel and plexiglass, 26"x18"x64"



AMERICAN CRAFTS 1977

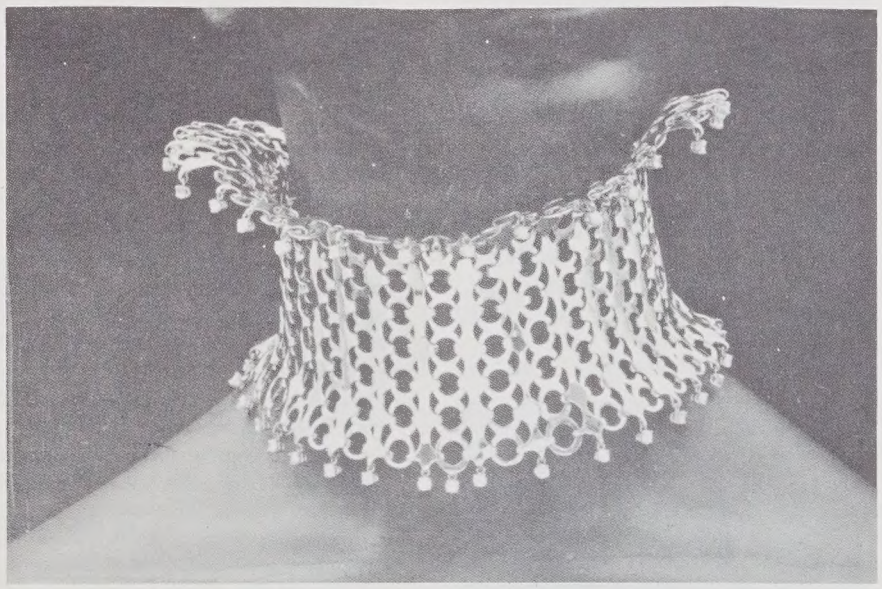
Hans Christensen, "Chicken", stabile, brass, 8"x7"

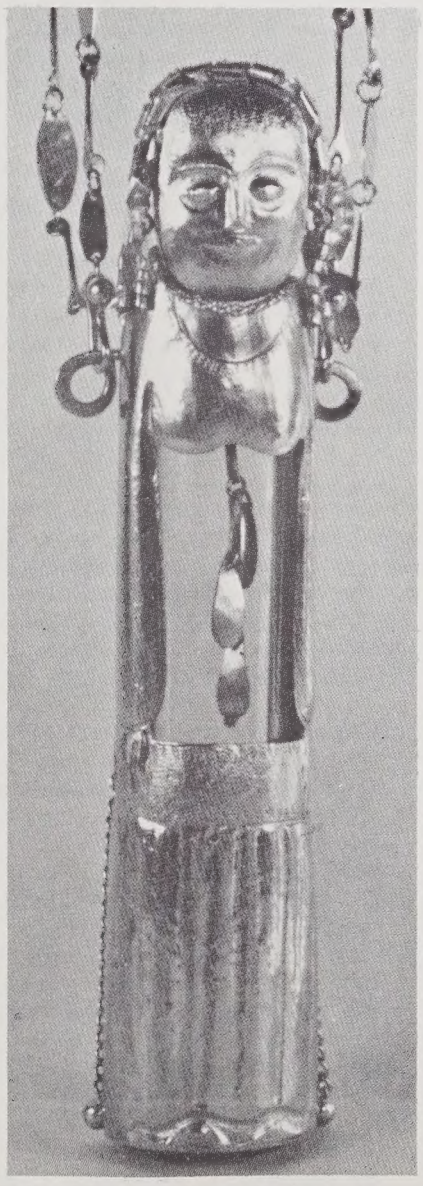
MORRISTOWN CRAFT MARKET
(Preview Evening, Oct. 7, Show, Oct. 8-9, 1977)

by Sybil Robins

juried show consisted of three sections – the juried show featuring 100 artists with space to display and sell their work, "American Crafts 1977" which had approximately 75 artists, and "Wearables" with 40 pieces of body adornment on exhibit. Mrs. Walter Mondale was the guest of honor at a preview reception on Nov. 5. In conjunction with the show, the Division of Education sponsored a series of talks on American crafts. Some of these included Albert Paley "From Goldsmithing to Architectual Work" and Mary Ann Scherr "Update: Contemporary Body Adornment". Also, 8 craft films were presented, one of which was "Three American Goldsmiths". Sharing the spotlight with the juried show was a special display of "American Crafts 1977", also available for purchase. Close to 100 of the nation's most distinguished craftsmen, including 34 from Philadelphia were invited by the Women's Committee to send 1 or 2 pieces of their work. This show was documented in an illustrated catalogue, which may be purchased for $3.50. SNAG participants were: William Harper, June Schwarcz, Glenda Arentzen, Arline Fisch, Mary Lee Hu, Eleanor Moty, Mary Ann Scherr, Hans Christensen, Albert Paley, John Prip and Anthony Lent.

Mary Ann Scherr, "Neck-Lace", 14k gold, 50 white diamonds, 4" x7





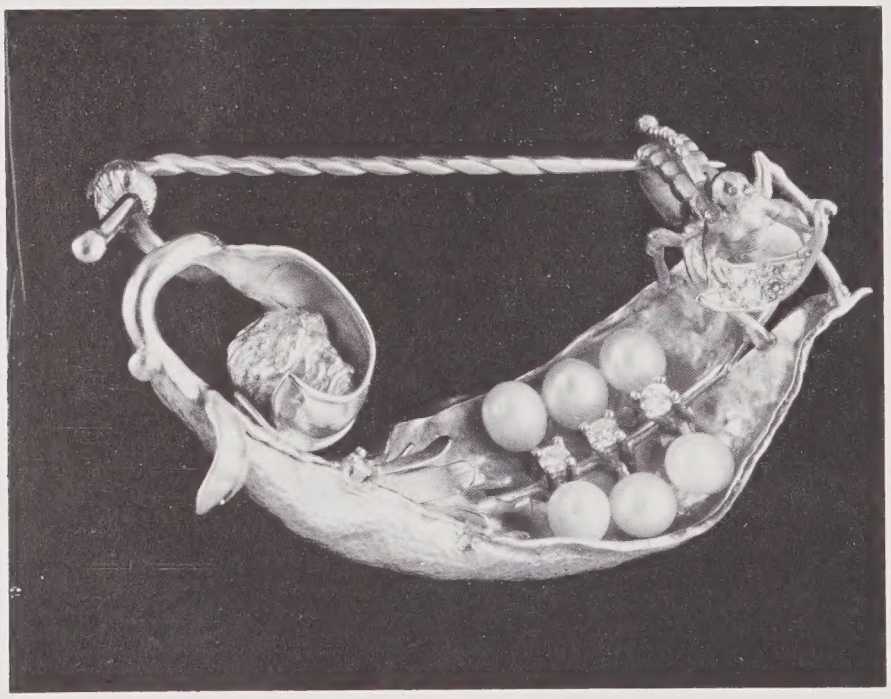
Arline Fisch, perfume flask pendant, detachable chain, sterling silver and glass, 5½"x1"

(At the National Guard Armory, Morristown, N.J. First annual exhibit sponsored by N.J. Designer-Craftsmen and the Randolph Township Kiwanis Club.)

For a first-time event, this show was well-organized and well-run, and its presentation in the Armory was admirable. Entrants were juried by slides submitted to a five-member screening committee comprised of five crafts professionals who work in different media, including Glenda Arentzen for jewelry.

Showing were 122 craftspeople from 8 states, including some 20 metalsmiths. With few exceptions, participants exhibited a reasonable level of competence in design and workmanship. Notable in metalwork were a varied presentation of precious jewelry by Carrie Adell, holloware and jewelry by Marjorie Rise Lizzack, massive belt buckles and bracelets of inlaid wood and ivory with silver by Paul Siegel, and fanciful Limoges enamel paintings by Marian Slepian.

THE MAKER, MAKING AND THE MARKET



Anthony Lent, "The Pod", pin, gold, diamonds and pearls, 7cm x 3cm x 3cm.

The Art Department of Georgia State University presented a multifaceted program this fall which encompassed the issues "The Maker, Making and the Market."

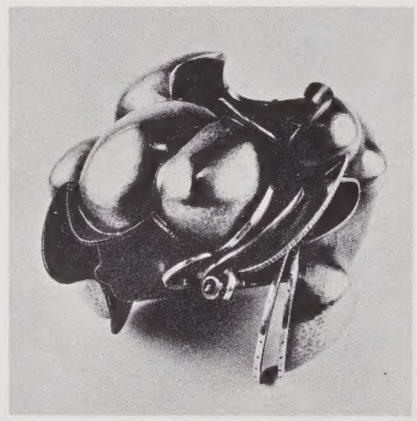
This topic proved engaging and exciting: about four hundred people attended a forum on October 27 during which invited speakers Francoise Grossen, Jack Lenor Larsen, Anthony Lent, and Byron Temple discussed their experiences and attitudes as artists who also function as businesspersons. Anthony Lent, the representative jeweler, expressed the belief that there is a market for finely made jewelry in this country.

Lent also gave a workshop in stone setting techniques for students and other interested observers.

The forum was complemented by an exhibition, "The Makers: Fiber, Clay and Metal," held in the Georgia State University Art Department's gallery October 17-November 18. Ten artists, including the four who participated in the forum, were invited. The faculty selected four jewelers who represent a great diversity of approach: Anthony Lent's figurative work in 18k gold and precious stones is delicate, detailed, and very small in scale; Gary Griffin's work is distinctive in his use of plastics and mathematically based compositions; Mary Lee Hu utilizes weaving techniques; Helen Shirk's contributions are constructed and architectonic.

The program was sponsored by Fulton Federal Savings and Loan Association. In past years they have generously sponsored the Art Department's national jewelry exhibitions.

A limited number of catalogues are available upon request.



Helen Shirk, bracelet, silver, brass, copper, onyx, delrin, 4"x4"

1. The Society of North American Goldsmiths, the principle advocate of the interests of the American jewelry and metalsmithing artists and designers, will hold its annual conference in St. Louis, Mo., June 8-10, 1978. The theme of the conference will focus on the changing scene for metalsmithing artists from the academic emphasis to the small business/survival emphasis. Speakers on the subjects of workshop related problems, financing, marketing, promotion, taxes, etc., will be featured. Panel discussions and lectures by those people who have already been successful in free lance work in industry and commerce will also be included. There will be two technical papers (topics to be announced at a later date) as well as an overview of the aesthetic conditions and developments in various parts of the world. Foreign participation is encouraged. For more information, write: Professor Heikki Seppa, No. 8 Price Ct., St. Louis, Mo., 63132. USA.
2. The Artist-Blacksmiths Assn. of N. America will hold a national conference April 26-29, 1978, at the State University of N.Y. in Purchase. Dimitri Gerakaris of Enfield is in charge of the program.
   Included in the program will be Tom Bredlow—gate construction and its many considerations; Dimitri Gerakaris—locks and keys, fundamental and intricate; Jud Nelson—hand forging techniques; Dr. Raymond Sobel—the psychology of the creative mind; Donald Streeter—hand forging techniques with emphasis on the traditional American style; Emmert Studebaker—regional conferences - advice on how to stage them; Francis Whitaker—hand forging techniques, tricks of the trade and individual instruction; and Harvey Yellin—the life and work of Samuel Yellin. For further information, contact: The Anvil's Ring, 1372 Peachtree St., N.E., Atlanta, Ga., 30309.
   A preparatory planning session by the sponsoring organizations will be held the last week in April, 1978, at State University of NY at Purchase. Information is being sought to prepare the way for an international conference to be held in June 1979.
3. May 31-June 4, 1978; Sculpture Today, 10th International Sculpture Conference, York University Campus, Metro Toronto. Write: Sculpture Today, 55 Bloor St. W., Suite 1405, Toronto, Ontario, Canada, M4W, 1A5. (416/966-3421)
4. RJA International Jewelry Trade Fair & Convention, N.Y. Hilton & Americana Hotels, N.Y.C. Feb. 5-8, 1978.
5. The Society of North American Goldsmiths has chosen St. Louis, Mo. for their next annual conference, June 8,9,10, 1978. Heikki Seppa and John Baltrushunes are coordinating it. Additional information will be printed in future issues.
6. Seminar '78 Announced. Jan. 15, 1978. The workshop will go from Mon. morning thru noon on Sat., 21. There will be six seminars for the working studio craftsman including metalsmithing with Heikki Seppa. Enrollment is first-come, first-served. Scholarship applications for Seminar '78 are available at League headquarters, La-Salette Seminary, Enfield, N.H.

LECTURES—WORKSHOPS

Charlottesville, Va.—Raising Workshop by Jim Meyer, March 4 & 5. $30 (non-members), $25 (members). Sponsored by Virginia Crafts Council. Contact: Mary Maher, 717 Rugby Rd., Charlottesville, Va. 22903. Phone: 804/295-6360.

Peters Valley Craftsmen offers 10-13 week internships (individual instruction) in jewelry/metalsmithing during the fall, winter & spring. The winter session begins Jan. 9, 1978. Spring session begins April 3, 1978. In addition, weekend and summer workshops are offered in metals, blacksmithing, and other craft areas. For more information and applications, write: Peters Valley Craftsmen, Layton, NJ 07851 (call 201/948-5200)

March 11-12, 1978, National Metals Invitational, Gene & Hiroko Pijanowski, The Creative Arts Workshop, 80 Audubon St., New Haven, Conn. A lecture will be given March 11 at 7:30 p.m.

Approaches to Jewellery (31 slides). "Ten Australian Jewellers", an exhibition that was specially selected for touring South East Asia in 1977.

Jewellery by Diana Boynes (27 slides). Diana Boynes, whose works are represented in the Australian jewellery exhibition now touring in S.E. Asia, concentrates on combining sections of whale's tooth and buffalo horn with sterling silver.

Australian Jewellers (24 slides). A kit of the Australian Jewellery exhibition at present touring Australia. It shows the work of 12 leading jewellers.

Frank Bauer at the Jam Factory (32 slides). An exhibition held by Bauer at the Jam Factory, Adelaide in Nov. 1975, showing recent developments in his work.

The Larsens in '76 (30 slides). Work done by Helge Larsen and Darani Lewers for 2 exhibitions held in 1976 — one in Brisbane and one in Melbourne.

Ray Norman (24 slides). Work shown at an exhibition of this Australian jeweller's work held at the Craft Centre, Melbourne at the end of 1975.

Neckrings and Pendants (18 slides). Leading Australian jewellers showing their varying approaches to the design of neckrings and pendants.

Three Australian Jewellers (15 slides). An exhibition held at the Craft Centre, Melbourne, in Dec. 1975, showing the work of Wal Van Heeckeren, Chris MacMaster and Hamish Campbell.

To order, write: The Resource Centre, Crafts Council of Australia, 27 King St., Sydney, 2000, Australia.

FILMS

Jewellery Making (16 mm, color, sound, 25 min.) This 3-part film shows a range of jewellery techniques demonstrated by Norman Creighton and Rex Keogh.

Larsen and Lewers (16 mm, color, sound, 30 min.) The daily life of this husband and wife jewellery team is shown in this film, the way they work and their thinking on the crafts.

The Craftsman and His Environment Matcham Skipper (16 mm, color, 7 min.) In this film, Matcham Skipper illustrates the techniques of lost wax casting. It is a silent film which explores the relationship between the craftsman and his environment.

Order from: The Resource Centre, Crafts Council of Australia, 27 King St., Sydney, 2000, Australia.

FILMSTRIPS

No. 390 Enameling: Painting with Glass, $99.50. 6 filmstrips, 3 cassette tapes, teaching guide, teaches history and how to do it.

No. 335 Jewelry: The Fine Art of Adornment, Lost Wax Method, $99.50. 6 filmstrips, 3 cassette tapes and teaching guide, teaches history and how to do it.

No. 370 Jewelry: The Fine Art of Adornment, Fabrication Method, $99.50. 6 filmstrips, 3 cassette tapes and teaching guide, teaches history and how to do it.

These are full color art craft teaching films with frame by frame instruction. To order: Warner Educational Productions, P.O. Box 8791, Fountain Valley, Calif., 92708.

SNAG FILM

A 13-minute, 16mm film on the Society of North American Goldsmiths is available to members for rental periods of two weeks. Associate members' fee is $5.00 plus return postage of $3.00. Pro members' fee is return postage. Contact: Sandra Parmer Zilker, 1536 Hawthorne No. 4, Houston, TX 77006.

FILMSTRIPS

INTRODUCTION TO BASIC DESIGN, P11, nature as a springboard for design ideas and concepts, $21.95, sound.
DOTS AND POINTS, P12, $21.95, sound.
LINDS, P13, $21.95, sound.
SHAPES, AREAS AND PLANES, P14, $21.95, sound.
COLOR, P15, $21.95, sound
SURFACE, P16, $21.95, sound.
MASS AND FORM, P17, $21.95, sound.
RHYTHMS AND FORCES, P18, $21.95, sound.
ANALYSIS OF DESIGN, P19, $21.95, sound.
GENERAL SOURCES OF DESIGN, P20, $21.95, sound.
SERIES OF TEN SOUND FILMSTRIPS DESCRIBED ABOVE, P11-20, $189.95, sound.
ENAMELING, P59, $21.95, sound.

SOUND SLIDESETS

ELEMENTS OF DESIGN, P01, 38 slides-SP01.
DESIGN IN NATURE, P02, 36 slides-SP02.
MAN-MADE DESIGN, P03, 37 slides-SP03.
ACCIDENTAL DESIGN, P04, 37 slides-SP04.
INDIVIDUAL SOUND FILMSTRIPS, +21.95.
INDIVIDUAL SOUND SLIDESETS, $44.00.
LAPIDARY, C6811, 35 slides, $35.
GLASSMAKING, C6812, 42 slides, $42.00.
ENAMELLING, C6816, 41 slides, $41.00.

To order: Scholarly Audio-Visuals, Inc., 5 Beekman St., N.Y., NY 10038. Sound slidesets have the audio portion on cassette tapes only. All slides are in color. All sound filmstrips have the narrative portion on cassette tapes only. When ordering, indicate "s" for filmstrip, or "ss" for slide set. If your school requires a purchase order, please attach it to your order. SA-V pays shipping charges when payment accompanies order, otherwise postage is billed to customer. All materials in this catalogue are available under TITLE IV-B projects.

SNAG AUDIO VISUAL LIBRARY

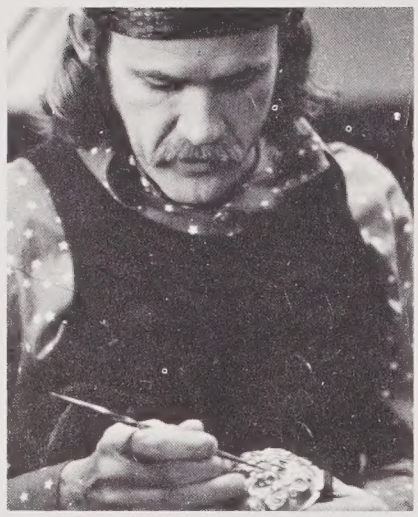
Slide kits are available on the following people: Maurice Abramson, Jay Adams, Glenda Arentzen, Joel Bagnal, Mark Baldridge, Peter Blodgett, Beverly De Jong, Bob Evendorf, Gerry Evans, Arline Fisch, Robert Risher, Jacqueline Fossee, Nilda Getty, Drewry Hanes, Mary Lee Hu, David Keens, Marcia Lewis, Val Link, Richard Mafong, James Malenda, Tom Markusen, John Marshall, Jurt Matzdorf, Richard Mawdsley, George McLean, Jim Meyer, Albert Paley, Natalie Paul, David Pimentel, Mary Ann Scherr, Heikki Seppa, Helen Shirk, Olaf Skoogfors, Toni Snyder, and J. Fred Woell.

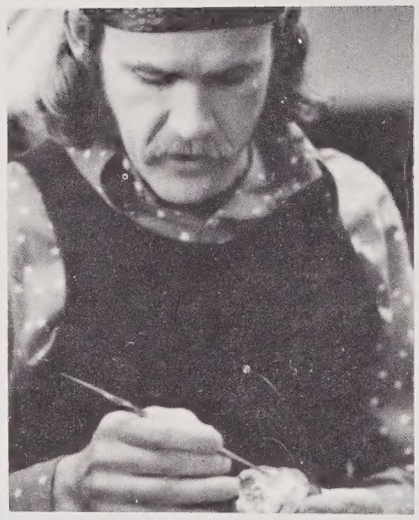
Rental period is two weeks. There is no rental fee for pro members (except return postage). Rental fee for associate members and student members varies from $1-$2 per carousel (depending upon the number of slides; carousels contain 20-60 slides) plus return postage. Write: Sandie Zilker, 1536 Hawthorne, No. 4, Houston, Texas, 77006. Please give a few weeks advance notice and make checks payable to Society of North American Goldsmiths .

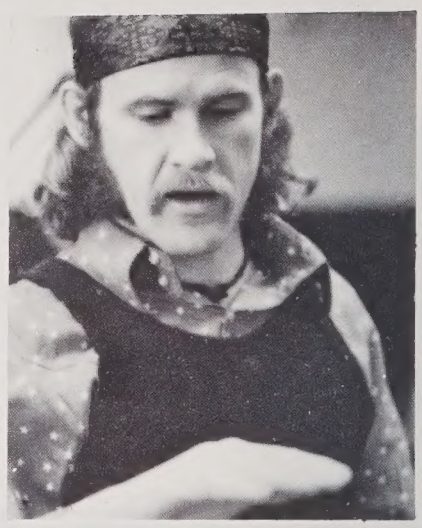
"QUOTE OF THE FAIR"

(courtesy of the League of New Hampshire Craftsmen, Oct., 1977, concerning their recent fair)

A father pointed to a booth holder, said to his child, "See, that's what happens to you if you don't go to college." (Pappy somehow didn't realize that craftsmen ain't ignoramuses, that they have just chosen an alternative life style. We'd be curious to learn how many dozens of degrees were held by booth holders.)







First the idea has to be thoroughly researched and debugged.

Then upon presentation to the peer group all salient aspects must be pointed out.

Here is a detail that affects this one and. . .building up strength within the whole.

The totality begins to take form. Despite of all these other shortcomings it should be in pretty good shape.

EDITORIALS

EDITOR'S NOTE—Because of the variety and nature of the Letters-to-the-Editor, SNAG and the GOLDSMITHS JOURNAL cannot verify or be responsible for the materials these letters may contain. It is therefore suggested that you carefully analyze and verify all information herein. We shall cons'der publishing responsible letters which refute any information we publish.

Dear Editor,

We would like to get recommendations from the membership as to the best scrap refiner. Thank you.

The Goldsmith Shop

Dear Editor,

I did not receive my last issue of the Goldsmith's Journal, Aug. '77. It is possibly because I moved and did not tell you. In any event, would you please send me a copy. Thanks.

(name withheld at Editor's discretion)

EDITOR'S REPLY: Unfortunately, we receive many letters similar to this one. At the present time, the Journals are being mailed bulk-rate and bulk-rate mail IS NOT forwarded. Each replaced issue costs money in printing, mailing and handling costs. PLEASE, notify us immediately of every address change. Our money is your money!

Dear Editor,

Upon your suggestion I will try to answer Pahaka's question asked in Vol. III, Number 3, page 18, June 1977, Goldsmith Journal.

1. The editors response gives you the three criteria for judgment of works presented to become professional members of SNAG. I think the decision is not affected if a person includes only holloware (objects), or only jewelry. We are looking for creative ability, excellence, or evidence of high quality design and craftsmanship.
2. Sometimes when I view a group of slides where the idea is fragmented and lacks thought, I might suggest that the artist's work would be more profound if smithing were a part of his development. I also often think when I look at a smithed piece that the artist might make better objects or a coffee pot if he had solved some problems of jewelry. Such an answer implies, that knowing both or more techniques would make the design idea better; that is not true. However, more techniques may open new avenues of approach.
3. Your question: Sophisticated technique, are we influenced by it? I do not believe a technique warrants merit until it is used in a sophisticated way. If the piece has merit, it is sophisticated in different degrees. Some techniques are indeed more difficult. It is the idea you are presenting, not the technique, and yet you cannot present an idea without the necessary technique.

Each juror separately either passes your work, or rejects your work. If he rejects the slides, he gives the reason for the rejection. There is no way we could get together for a general discussion of each group of slides.

The jurying system always seems vague, that goes for choices made for shows, photos in catalogues and for publication reviews. It is not a math problem, and there isn't any clear way to show you that 2+2 equals four, or maybe three or six. The process is perhaps more vague when your pieces are not accepted; and not so mysterious, to you, if the work is accepted. Acception or rejection doesn't necessarily take away from the mystery.

The most important thing is the ability to evaluate your own work. If you believe your pieces are good, and that some pieces are better than others, and that the range of your work improves progressively in idea and technique, then isn't that why you are doing the whole thing?

Each person evaluates his own work and that of other artists. Competition in the field of metal work is very exhilerating now, and there are many beautiful pieces being made. This gives you a good chance to compare your own work. A craftsman doesn't need to use every technique there is to make a worthwhile piece, and he need not compare his work to everyone in the field.

There is always room for better works of art; there is never enough of excellence. Rejected pieces should make you re-think your piece, but should not discourage you. Send them to another show they may win a prize. Isn't it wonderful that the same person or same panel doesn't jury every show.

Judges reactions and show records or even getting into SNAG should not keep you from making another piece. The things you solve for yourself at the metal work bench is what counts. Those pieces are your creative statement.

Alma Eikerman, Distinguished Professor, Indiana University

Dear Editor,

. . . I will be happy to keep you posted on interesting developments at GIA. Please let me know if any members of the Society in the Los Angeles area would be willing to see me. I would be interested in talking with them . . .

Best regards,
Gemological Institute of America
Rose Levine, Staff Gemologist

Dear Editor,

I am writing to suggest that when a person is admitted to SNAG — either as a professional or as an associate member — I think it would be appropriate to send this person a certificate of membership. This formality might be unimportant to many members, but to those of us who earn our livings through our work there are few certificates suitable for placing on the walls of our shops. For instance, I have never been particularly interested in joining the Jewelers Board of Retail Trade or the American Gemological Society for the sake of their certificates, and it has never seemed appropriate to hang my diploma; but a certificate from SNAG would indicate a level of professionalism and skill that lends itself to this sort of thing.

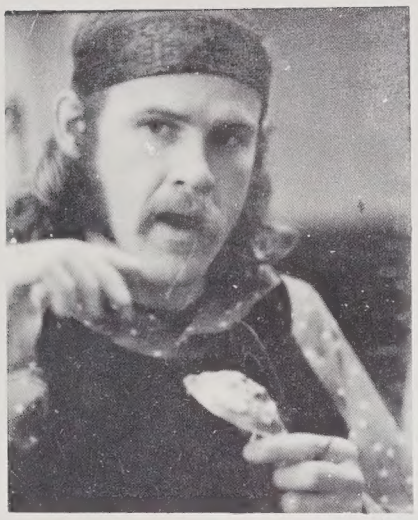
There are a couple of other considerations: if SNAG is going to continue its interest in integrating the more academic aspects of North American jewelry with the business aspects this would be a step in the right direction. And since SNAG is a relatively unknown organization to most commercial jewelers, not to mention to the general public, this would certainly arouse some interest. As an example, there are 40 jewelry shops in Carmel and probably 60 jewelers and I imagine that due to my academic background I am the only one who has ever heard of SNAG, but if someone were to see a certificate in my shop and ask about it, I would gladly take the time to explain the organization and encourage them to join.

Douglas Steakley

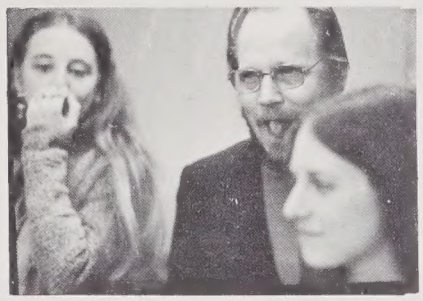
Dear Editor,

Question: Does anyone know a source for purchasing a metal polish called WENOL (plus k)? It comes in a tube and is given as a free sample sometimes.

Pahaka



VICISSITUDES OF COMMON GOOD BY HEIKKI SEPPA,
starring Bob Ebendorf



Now everybody's input is needed to make it work. It will be only as good as we make it. It is up to you. It is a mutual effort.

But what am I going to get out of it? Sounds too expensive. What about me, me, me? I'll risk too much.

So you think that common good is going to be served to you just like that. Listen Friend! There is no good unless you join in with the others to create it. I can't do it alone—no one can.

I'm fed up to here with the gripes and complaints. Do a little of this work yourself and you'll find out who is working for whom.

Dear SNAG Members and Interested Parties:

As a non-profit publication, the GOLDSMITHS JOURNAL is entirely dependent upon volunteers. Since we don't have paid "eyes" and "ears", we rely on you for our information. Therefore, I am asking that from time to time you help us. When you are working and discover or utilize a time-saving technique, jot down a "helpful hint" for us. When you or a fellow member have been invited or accepted into a show, write us some "members news". When you become aware of a conference, exhibit, lecture, etc., or a person that possesses a special knowledge, let us know the complete information since we may not be aware of it. When you want to express your satisfaction, dissatisfaction, inquiries, answers or ideas, write a "letter-to-the-editor". These are only little things, but they help us immensely.

If you want to help us even more, write an article. Each of you possesses many facets which are of interest to all. Many of you possess a special historical, aesthetic, or technical viewpoint that should be shared with everyone. Unfortunately, because of the size and geographical dispersion of our membership, we are unaware of most of this knowledge. Let us know of these specialties and your willingness to assist us. Some of you already have contributed to the JOURNAL extensively, and I want to thank you. I only hope I can coax you to contribute again, and again, and again.

Some of you, especially our new members, may feel you have nothing to contribute or you may feel incompetent as a writer or reporter. Nonsense! Everyone has something to contribute and all of you do have the ability. If you are not a fantastic writer, ask a friend to assist or proof read for you — or, we'll assist. When a metal/jewelry exhibition is coming to your area (or vice-versa), write and offer to write a review. Almost all of our past articles are written by amateur writers.

I am not asking for a flood of letters, articles, etc., since a flood is not what we need! Instead, we need a steady continuous flow of information, conference and exhibition reviews, helpful hints, articles, etc. It is so easy to sit back and mentally express your thoughts, ideas, and good intentions of writing an article — it is much more difficult to put these intensions on paper. However, that is exactly what we need if the JOURNAL is to continue and reach its ultimate goal. The potential of the JOURNAL is fantastic because of the collective membership of SNAG. No other metal/jewelry organization encompasses such a variety of creative individuals. As editor, I shall not be content until I have tapped our resources as much as possible. So, I need YOUR help. Remember — the JOURNAL is your JOURNAL and you determine its future.

Mark Baldridge, Editor
GOLDSMITHS JOURNAL

Dear Editor,

In the book that I am writing, I would like to cover enameling on gold, but to date I haven't found anyone who does limited production with it.

The other enamelists who have written up their method of working a particular enameling technique will have their name and their work with that chapter. In addition to covering the basic enameling techniques, I'm trying to cover those techniques that have not been written up in detail by working enamelists.

The questions that come to mind about enameling on gold are: What karats of gold sheet stock can be enameled? What determines which karat and which gauge to use? Does the karat gold have to be a special alloy? How is the metal cleaned to be ready for the application of enamel? Are all karat golds fired to the same temperature? How do they differ if there is a difference? Are there necessary precautions to prevent warpage? Must only enamels manufactured for gold be used? Is it necessary to first fire a base coat of flux? Does it matter which flux? Why? What are some of the mishaps that can occur? How can the mishaps be prevented?

If I knew more about enameling on gold, I would probably know more questions that should be answered. Hopefully, someone "out there" will know and be willing to answer.

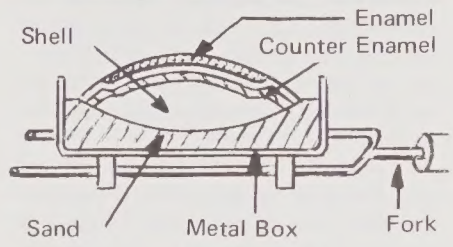
If you know of anyone who regularly enamels on gold, I would appreciate receiving the name and address so that I could telephone. Since writing is a tedious, time consuming job, I would gladly write it up if I could get the information and of course give credit to the craftsman.

Thank you very much for any help you can give me.

Lilyan Bachrach
378 May St., Worcester, Mass., 01602. Telephone: 617/756-8295

Dear Editor,

In answer to your questions on enameling: the only gold I have been able to enamel on is 18k a special "Enameling Alloy" from Handy & Harman. Other than 24k, regular enamels by Thompson will not adhere to 14k green which has silver and a little copper. Gauge? I have worked gold down to .014 if only approximately 1" square and used the counter enamel for strength.
I always burr my metal and get a fresh surface of new metal to get maximum brilliance. Fire temperature on 18k yellow is about 1660 F, but I never fire my transparent enamel over 1500 F. Warpage — I try and counter by using Silica Sand. Burn it first to dry out and then use that to support my piece.



CROSS-SECTION

There may be special enamels for gold, but I don't know — all transparent colors on the yellow saturation of the gold and the reds/oranges are great that are very difficult over silver. I try and cover all the gold with a coat of enamel first — flux is okay if you burn it till it's clear (transparent). I use 752 (?) I think (flux Thompson for silver) as it's not yellow — you get enough yellow from the gold. Mishaps — none special to gold that I know of. Follow good techniques of enameling—clean, clean.

The two people that have enameled on gold for years would be John P. Miller at Cleveland Institute of Art and the other is Kenneth F. Bates.

William Newmann

Dear Editor,

I am currently taking Mary Ann Scherr's place at Kent State U. (1977-78). During my one-year leave of absence from Humboldt State U., Arcata, CA, Holly Sparkman is taking my place. I plan to return to Humboldt for the 1978-79 academic year. Thanks.

David LaPlantz

Dear Editor,

I have quit teaching at the Southwest Craft Center and have set up my own studio with a photographer, Judy Bankhead. The studio address is 3602 Ave. B, San Antonio, Texas, 78209. I will welcome any visiting goldsmiths, silversmiths, etc. at anytime. Thanks!

Pat Gavin

Dear Snag Members,

The Nomination Committee of the Society of North American Goldsmiths will begin its deliberations for the elections of 1978. The Committee would like to have input from the membership as to who should lead our organization and who should sit on the Board. This election will be for President, Vice-President, and one member of the Board.

Finding the most qualified person to run our organization is vital. Please send any suggestions for possible candidates to me. In making these suggestions you should keep in mind that the person being suggested should be willing to serve. If you are not sure that the person would be willing to serve, let us know your suggestions anyway and we will take care of contacting them. With the suggestions we would like to know why you think this person would make a good officer of SNAG, as well as other information that might help familiarize our committee with the person. If you would like to suggest yourself, please feel free to do so.

All the help you can give us will be greatly appreciated. Submitting names to the Nomination Committee will not necessarily mean that they will appear on the ballot. Please have your suggestions to me by Feb. 15, 1978.

Nomination Committee:
Chuck Evans
Marcia Lewis
Richard Mawdsley, chairman
1721 Truman Dr., Normal, Ill. 61761

Dear Editor,

I would like to support Marcia Lewis' comments about The Elements, a craft gallery/shop. I also have had favorable dealings with Kay Eddy and her co-workers. I am paid on time each month for what is sold and my work is returned promptly when I ask for it. Even my pliqua-a-jour jewelry is returned with absolutely no damage, which I consider a real miracle.

I recently received notice that they will be opening a gallery in New York City. This should give Kay and her associates the added success they well deserve. I don't know of another gallery/shop that treats its artists better than the Elements does.

Margaret Fischer

Dear Editor,

SNAG members and JOURNAL readers, especially those involved with blacksmithing will enjoy reading an article titled, "How the Iron Age Began", in the Oct. 1977 issue of the SCIENTIFIC AMERICAN. Written by a group of archaeologists and metallurgists from the University of Pa., the article deals with the cultural and technical reasons for the shift from bronze to iron tools in the ancient Mediterranean world.

As well as being enjoyable reading, the article contains explicit technical diagrams, charts, and micrographs to substantiate the text; I recommend it for anyone involved in working iron.

Paul Klecka
112 S. 2nd St., Geneva. IL. 60134

Dear Editor,

. . . I would like to enthusiastically recommend two books which are invaluable to the business/craftsman. I learned over several years (and continue to) by what I like to call "trial and success", many nuances of the trade, the market, the profession, et. al. How surprized I was to find recently all my personal revelations written tidily into one small book. *Selling Your Crafts* by Norbert Nelson, published by Van Nostrand Reinhold Co., $3.95. It is geared toward that person who feels okay about producing a line of goods, but I think the strictly one-of-a-kind artist would learn a lot, too. The second book that is so great is called *How to Write Successful Business Letters*, and is much more entertaining and innovative than its title suggests. The author, John Riebel, promotes an entire business attitude of friendliness, understanding, clarity and professionalism. I think everyone who writes letters should read it, but especially those who depend in any degree in their careers upon written communication. It is published by Arco Publishing Co. and retails for $5.00. Two very important points he stresses are: [1] to write naturally, as you speak, and avoid fancy jargon and false language, [2] to consider the OTHER person and try to see and express your understanding of HIS needs and position. It has certainly helped me.

Betsy Fuller

DIAMONDS ARE FOREVER

But Rubies, Sapphires, and Emeralds May Be Even Better Investments

by Al Robbins

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Twice a year, the Hotel Richemond in Geneva, Switzerland — an elegant, mansard-roofed, nineteenth-century affair on the shore of Lake Geneva — is converted into one of the world's most captivating sales salons. The occasion is an auction of "magnificent jewels" conducted by Christie's, the London-based international auction house. For four days prior to each sale, thousands of people queue up in the hotel to catch a glimpse of the items for auction. Within the locked, well-guarded display cases one can view diamonds so perfect that they seem like crystal fire; emeralds that are the deep, soft color of kelp washed ashore by a calm sea; sapphires that capture the clear, even blue of the most perfect autumn sky; and rubies so red and lustrous that surely they once must have graced the person of an Eastern potentate.

But when the actual sale commences, only 250 people fill the grand ballroom of the Hotel Richemond. Among these are some of the most recognized names in jewelry (Harry Winston, The Arpels family, Cartier), along with other gem dealers, scions of industrial fortunes, and glamorous film stars — in short, people with money, lots of it. At last November's sale, code named "Jubilee," $8 million of the world's finest jewelry changed hands. The sale itself was divided into three sessions by order of importance; and the final session, which began at eight o'clock in the evening, was conducted by Christie's chairman, Sir John Floyd. It was here that the creme de la creme came up on the block.

Lot number 373, described in the auction catalog as "an important diamond ring" containing a center stone weighing 23.85 carats, sold for $230,000, or approximately $10,000 a carat, making it a very important ring indeed. Yet minutes later, lot number 377, a gem emerald of virtually the same size and quality brought $250,000 or $11,000 a carat, a small yet very significant difference. The emerald, it turned out, was the more valuable stone. Later still, lot number 412, "an important cushion-shaped ruby weighing 8.09 carats," was hammered down to $170,000, almost $21,000 per carat, which far outstripped an 11-carat, flawless, blue-white diamond that had previously sold at $13,000 per carat.

The prices at the Christie's auction were no fluke. They merely illustrate current trends in gem values.

"Ten years ago, the diamond was still king," says Francois Curiel, a jewelry appraiser for Christie's. "All the colored gems were worth money, but not as much as a diamond. Today, this is not true, simply because it's getting more and more difficult to find good stones. The important mines have been exploited for hundreds, even thousands of years and are producing less and less good material. The dealers who travel to the gem centers in Ceylon and Burma don't find many new quality stones."

What is the mystique of the precious colored gems? What is there about the beauty of, say, a ruby that drives people to pay huge per-carat prices that, at 142 carats to the ounce, make it the most precious substance on earth?

In many ways, the desire to own a large gem is one of the most primitive instincts of mankind. The practice hints of a time when shiny pebbles found in riverbeds were strung together as totems for some neolithic cult. Gems have always symbolized wealth and power, partly because they are rare, partly because of their inherent unique qualities, and perhaps, most important, because of the expenditure necessary to acquire the stones and store them safely. It was not by accident that monarchies came to regard crown jewels as a symbol of the invincibility of the realm. Even today, the British crown jewels contain some of the most fabulous gems in the world; and the Irani crown jewels, valued at billions of dollars, are used to back the nation's currency.

"One must always remember that gems are a sort of international money," says Curiel. "For example, I was working in Spain when the Portuguese revolution took place. Every day women came to my office who had fled Portugal taking only their jewelry and the clothes they were wearing. And we were able to convert those jewels into cash very quickly."

Unlike the diamond market, which is controlled by a single international cartel (DeBeers Consolidated Mines), the rising price of colored gems is determined solely by actual supply and demand. DeBeers advertises diamonds extensively. A typical ad shows a loving couple gazing longingly at a

ring on the enraptured woman's finger, while a tasteful caption announces that "A Diamond Is Forever." It is a mark of their rarity that colored stones, which are hardly promoted at all, have recently experienced such an increase in value.

Experts also attribute the new appreciation and demand for precious colored gems to a heightened public awareness created, in part, by synthetic gems grown in a laboratory. While it is easy for a practiced eye to tell the difference between a natural and a fake gem, inexpensive jewelry set with synthetic stones has helped to create a market for the real thing. Scientists simply cannot match the color of a crystal that Nature takes millions of years to perfect, and synthetics only create hunger for the natural.

"Many years ago, most families in this country didn't have the disposable income to buy a precious stone, so fine stones were seen by very few people," says Dr. Frank Crowningshield, New York director of the Gemological Institute of America. "Synthetic stones allowed people to see gems for the first time. Many people have bought synthetic only to replace them with natural stones. Why? Psychologically, there is something more beautiful about a natural stone. It gives the owner a sense of well-being, accomplishment, and beauty."

Perhaps it is the idea of pure color captured in a crystal that fires the imagination. Certainly, the very language we use to define color is punctuated with references to gems. We speak of ruby red lips or a sapphire blue sea. Gem emeralds are not mined in Ireland, but we're instantly aware of the greenness that has earned the country its nickname as the emerald isle. In many ways, the appreciation of colored gems is the quest for pure color.

But to truly comprehend what it is that precious gems represent, one must first understand the natural phenomena of the gems themselves:

*The sapphire is a crystal of a mineral called corundum, an aluminum oxide and one of the hardest substances known to man. Sapphires come in all colors of the spectrum, but aside from the ruby — actually a red sapphire— only the blue variety commands a very high price. The blue color is produced by a minute trace of iron within the corundum crystal. Sapphires have been known since ancient times. The most important mines, many of which show evidence of prehistoric mining efforts, are located in Burma, Thailand, and Sri Lanka.

*The ruby is undoubtedly the rarest kind of corundum crystal. Its color is caused by a minute trace of chromium oxide. The finest rubies come from the Mogok Valley of Burma, but the gem is also found in roughly the same areas as are sapphires, and new deposits have recently been discovered in East Africa. In ancient times, other red gems were often confused with rubies, which led to a few embarrassing discoveries once modern techniques of scientific analysis were developed. The Black Prince's ruby in the crown of the British Empire, for example, is actually nothing more than a red spinel.

*The emerald is a green variety of the gem family called beryl, a beryllium aluminum silicate. Its green color is caused by a minute trace of chromium within the crystal, combined with an even smaller trace of iron. Beryl crystals that contain only iron are pale blue in color and are known as aquamarines. The best emeralds are found in Colombia, where the remote mining towns are said to resemble the chaotic boom towns of the Old West. They are also found in other parts of South America, East Africa, and the Soviet Union.

Unlike the diamond — which is scientifically graded according to a system that balances the stone's color, cut, and clarity, or lack of imperfections — colored stones are evaluated primarily, as one might expect, on the intensity of their color. But, surprisingly, gemologists have been unable to devise a scientific method for grading color; and while the best colored stones can and do sell for thousands of dollars per carat, inferior shades can sell for very little.

Successful gem dealers must have the ability to remember minute differences between shades of color. In the absence of the precision of diamond grading, the gem industry has developed a vague rule of thumb to classify stones. Gem colors are labeled according to where the best examples of various shades are customarily found in nature.

"Rubies range in color from Burmese, which are the finest, to Siam" explains Paul Russo, an assistant vice-president at Sotheby Parke Bernet. "Burmese rubies are a pigeon's-blood red, a deep red color with very little pink. Ceylon rubies are more pink, a reddish pink. And the least of the three, Siam rubies, are a very dark, maroon red, a blackish red.

"Sapphires range from Kashmir to Ceylon. The Kashmir sapphire is a very soft blue; the term cornflower blue is often used to describe it. Burmese sapphires are a deep, royal blue color. The least of the three, Ceylon sapphires, are a lighter, but more brilliant blue.

"Emeralds are divided into Colombian emeralds and Russian emeralds. The South American emeralds are the yellow greens, and the Russians are the blue greens. The finest-quality emeralds, usually found in Colombia, are a rich green — not a dark green, but a deep green, a rich velvety green."

If all this sounds very imprecise, it is — at least on paper. In actuality, after an individual has spent years studying the nuances of color differentations, the distinction becomes very clear. It must, since thousands of dollars often hang in the balance between an emerald that is, for example, a "deep green" and one that's a "rich green."

How does one judge top-quality color? In the final analysis, it often devolves into a matter of preference. "Can I say that it's a bit like everything in life?" says Christie's Francois Curiel. "The stone mustn't be too-too. It mustn't be too dark, but it mustn't be too light. It mustn't have too many flaws, but with no flaws at all it can look dead. It mustn't be too bright, but it mustn't be too dull. It must approach perfection, but what is perfection? How can you describe a red, a blue, or a green; by saying there is less green, more green, less yellow, more yellow? It's impossible to define."

Nor do the other criteria used in grading diamonds apply in quite the same way to colored gems. A top-quality diamond must be cut to a precise proportion in order to refract light optimally. Colored stones are cut to capture the most color in the stone. Consequently, colored gems often appear to be cut erratically. Often, they are very deep stones, meaning that the bulk of the gem's weight forms the lower portion of the finished stone. This gives the gem a better depth of color, but causes the stone to look smaller than its weight, which many buyers find unattractive.

Similarly, for a diamond to be of top quality, it must be flawless or nearly flawless. Flawless colored stones, however, are practically unknown, and the only sort of flaw that seriously affects their value is one that might cause the gem to crack. Nevertheless, a colored gem that is flawless, well cut, and of top color is a rarity that commands top prices.

Not surprisingly, as interest and demand for precious colored gems have increased, lesser colored stones have similarly experienced a wider appreciation and a corresponding rise in value. Jewelry made from aquamarine, tourmaline, quartz gems such as amethyst and citrine, and opals, to name a few, is seen more frequently today than ever before.

The range and variety of the lesser gems are enormous. These stones are less valuable than the precious gems, because they are more plentiful in nature. Here's a quick look at some of the more popular lesser gems:

*Quartz, a silicon dioxide, is one of the most common substances on earth. Gem-quality quartz occurs in a huge array of colors and varieties, but these are generally divided into two basic categories. Crystalline quarts, the product of a single crystal structure, includes amethyst (purple), citrine (orange), rose quartz (pink), and smoky quartz (brown). Cryptocrystalline quartz gems like agate, jasper, and onyx are collections of tiny quartz crystals. These gems are all very attractive and can be purchased at reasonable prices.

*Turquoise, very much in vogue today, is a copper aluminum phosphate. Its distinctive blue color is derived from the copper within the stone. Turquoise is a very porous stone, however, and tends to turn greenish or fade in color over the years. The finest turquoise is found in Iran. American Indian jewelry utilizes turquoise from the American Southwest, which, while of an inferior quality, functions very dramatically within the design.

*Beryl is a beryllium aluminum silicate. Aside from the emerald, the rarest and most valuable member of this gem family, beryl occurs in three attractive colors: aquamarine (pale blue), morganite (pink), and golden beryl (yellow). These stones offer the attractiveness and hardness of a precious gem at a fraction of the price (although aquamarine currently sells for as much as $500 a carat.)

*Garnet is the name attached to a whole mineral family of gems. Garnets come in all colors of the rainbow but are most commonly associated with the red variety so popular in Victorian jewelry. The term garnet is derived from the Latin phrase *malum granatum*, for pomegranate, the seed-filled fruit with which the stone's characteristic red color has historically been identified. Some varieties of garnets are very rare. Recently, a new and very beautiful variety — an emerald green grossularite garnet — was discovered in East Africa. The gem has been dubbed tsavorite. It is now being marketed around the world as a new precious gem, although most gem dealers agree it will never achieve that class, because it only occurs in rather small crystals.

*Opal is a hydrous form of silica. Its characteristic "play of color" derives from tiny globules of water suspended in the stone at the time of crystallization. The most valuable variety of opal, the black opal, often sells for thousands of dollars; but the less valuable blues and oranges are readily accessible. The opal is a very soft, brittle stone, and its tendency to crack has long caused it to be associated with bad luck.

*Other lesser gems worth considering include topaz, tourmaline, zircon, spinel, and peridot. Except for the peridot, all of these gems occur in a variety of colors and can be made into attractive jewelry. Pink stones, especially the pink varieties of topaz and tourmaline, are experiencing wide popularity today. The red spinel closely resembles a ruby. And the peridot, a pale green stone that was highly prized by Egyptian pharaohs for its mystical properties, makes an enchanting piece of jewelry.

Right now there is a debate raging among gem aficionados about the advisability of buying gems for investment purposes as well as adornment. Almost everyone agrees that gems can be a good investment if they are bought "right"; but the lay person generally lacks the expertise to make a sound judgment. The man most insistent in advocating the investment potential of gems is Benjamin Zucker, a New York gem dealer whose recently published book *How to Invest in Gems* precipitated much of the current debate. "Precious gems are an excellent area of investment today for anyone with $5,000 or more," writes Zucker. "Unlike stocks and bonds, which are sensitive to the volume and flow of paper money and have generally decreased in value during our current inflation, the value of colored stones and diamonds has consistently risen. In fact, the price of rubies, emeralds, sapphires, and diamonds has increased thirtyfold in the period since 1900."

However, as Paul Russo of Sotheby Parke Bernet points out, very often gem investors, in their zeal to buy quality, purchase a piece at a premium price on the retail level and discover years later that, since resale usually takes place on the wholesale level, they have made no investment at all. "Many people who've purchased jewels on the retail level, let's say ten years ago, have brought the piece to us for sale and have been disappointed," says Russo. "We might evaluate it at the price they originally paid, or sometimes less, and they say, 'Where is my investment?' Well, if you're buying at the retail level, you're not buying for investment."

"There's been a lot of ballyhoo lately about investing in stones for a future hedge," says Dr. Crowningsheild. "We're against that, simply because that is not the way jewelry is to be used." Most people involved in the gem trade agree that even if you do plan to purchase stones as an investment, the key should be in buying something that can be worn and enjoyed, rather than simply stored in a vault.

Most of us, however, will probably never have to face the question of whether or not gems offer a lucrative capital return. For the average jewelry consumer, several hundred dollars is a major purchase, and questions about megarocks become superfluous. Still, one visit to a neighborhood jewelry store will reveal that gems exhibiting fine color are available within an affordable price range.

The trick in buying any piece of jewelry is to deal with a reputable jeweler whom you feel comfortable placing your trust in. The person selling you a gem will be more knowledgeable about the subject than you are, so don't try to second-guess him. Remember also that the laws prohibiting fraud and misrepresentation apply to jewelers as well as to any other business person.

Still, many jewelers are far less knowledgeable about colored stones than they are about diamonds. It's wise to shop around, comparing stones, shades of color, and price range before settling on someone with whom to deal seriously. Make sure that your salesperson is able to answer all your questions, and ask to see less expensive and more expensive samples of the stone you are considering, so that you understand how nuances of color and clarity translate into the dollar value of what you are buying. Many jewelry stores exhibit their stones under high-intensity, artificial light. Ask to examine the stone in natural light, perhaps by a window, so that you may get an idea of how the stone looks in varying lights. Often it does make a difference.

Jewelry does not have to be outlandishly expensive to be beautiful. The most important consideration, your prime motivation, ought to be acquiring something YOU enjoy, something YOU feel comfortable wearing. If your purchase represents a considerable investment, it might be wise to have the piece insured. For a small fee, most jewelers will give you an appraisal that you can then take to your insurance company. Remember, gemstones are crystals, and even though they may be very hard, they can chip, crack, or even shatter, (depending on their internal atomic structure) if they are dropped or knocked, so be careful.

Even if your budget is small, you may not want to abandon the lure of the precious gems. Happily, these stones, too, are available to the general consumer. "Colored stones in their best colors, in their purest colors, don't have to be large to be beautiful and to be enjoyed." says Dr. Crowningshield of the GIA. "You could take a 20-point sapphire, put two little diamonds side by side, and make a very beautiful ring. It's real, it's beautiful, and you can enjoy it forever."

POSITIONS

VISITING ARTIST-TEACHER POSITION: Next year, the school of art at Montana State U. will be continuing its visiting artist/teacher program. The metalsmithing area is interested in persons who could teach in the metals program for any one of the three academic quarters.

The visiting position is full-time teaching for one quarter (fall, winter, or spring) with a contact load of 16 to 18 hours per week.

If you are interested, please send your resume, slides, and a preference of which quarter you would be interested in teaching, by March 15, 1978.

Fall Quarter—Sept. 12, '78 thru Dec. 15, '78; Winter Quarter—Jan. 3, '79 thru March 16, '79; Spring Quarter—March 21, '79 thru June 8, '79.

Write: Richard Helzer, Associate Professor, Jewelry's Metalsmithing, School of Art, Montana State U., Bozeman, Mont. 59715.

JEWELRY/SILVERSMITHING: Indiana University, position to teach jewelry and silversmithing at the asst. professor level. A MFA degree in jewelry and silversmithing and teaching experience at the college level is mandatory. Responsibilities include teaching undergraduate and graduate students. Send a cover letter stating salary requirements, names of at least three professional references, 20 slides of professional work and 20 slides of student work done under the applicant's direction. A brief statement concerning professional and teaching philosophy would also be very desirable. All slides must be submitted in plastic sleeves and a self-addressed envelope with postage affixed must accompany all applications. Application packages will not be considered complete until all of the above is on file and no materials will be accepted for consideration after Feb. 17, 1978. Send all applications to Reginald Heron, Chairperson, Search Committee Dept. of Fine Arts, Fine Arts Building, Indiana State University, Bloomington, Indiana, 47401.

Crafts slide registry at the Craft and Folk Art Museum. To open or update your files, send 5 to 7 slides and resume to: Suzy Ticho, Craft and Folk Art Museum, 5814 Wilshire Blvd., Los Angeles, CA, 90036. Each slide should include name, address (home and studio), telephone numbers (home and studio/work), educational background, exhibits, collections, and publications.

The Cummington Community of the Arts is now accepting applications for residency. Artists may elect to stay for any period with a minimum stay of one month. A monthly fee of $200 is charged for private room or cabin, studio space, and meals. It is especially interested in recruiting artists who have been alienated from the prevailing cultural establishment and who have been disadvantaged by race, sex, age, or economic class. For applications, write: Admissions Committee, Community of the Arts, Cummington, Mass., 01026.

The Worshipful Company of Goldsmiths has technical reports available on the following subjects. (Air Mail prices are listed next to each item; Surface Mail prices are in parentheses.) 13/2 Photoetching Process—L2.25 (L1.75); 29/4 Pickling of Nickel Silver—$ 75p (L 50p); 5a/4 Tarnishing of Silver—L1.00 (L 60p); 3c/3 Adhesives—L1.00 (L 60p); 28 American Techniques—L1.00 (L 60p); 30 Synthetic Gemstones—L1.00 (L 60p); 8 New Products Bulletin—L.1.00 (L 60p). NOTE: These prices are all in pounds and pence.

Please send payment, making checks, money orders or postal orders payable to the Goldsmiths Research Foundation Ltd. Libraries of colleges running full time senior level courses in jewellery, silversmithing and allied crafts, as well as members and associate members of the Design & Research Centre need send no money unless additional copies or Air Mail postage are required. Address to: Director of Research, Worshipful Company of Goldsmiths, Central House, Whitechapel High St., London, England, E1, 7PF.

CRAFTSMEN'S FELLOWSHIPS

Fellowship grants totaling $290,000 have been awarded by the National Endowment for the Arts to 58 professional craftsmen from 21 states. The $5,000 grants are awarded to be spent as the recipient sees fit to advance his or her career. This year, fellowships were awarded to the following SNAG members: Sharon Church, Fred Fenster, Ruth Laug, Richard Mawdsley, Gayle Saunders, and Fred Woell.

Applications for next year's Craftsmen Fellowships are being accepted thru December 20. For further information, write: Crafts Coordinator, Visual Arts Program, National Endowment for the Arts, Washington, D.C. 20506.

Selected articles on craft from recent issues of periodicals may be ordered at the rate of 20 cents a page for photocopying. Articles include:

Designscape, Dec. 1976, p. 35. Figures in copper by intermediate school children in New Zealand.

European Jeweller, Nov. 1976, pp. 69-73. The work of three designers for the Finnish firm Lapponia Jewellery-Bjorn Weckstrom, Juhanni Linnovaara and Paul Havgaard.

European Jeweller, Sept. 1976, p. 45. The work of French goldsmith Francois Auchere.

European Jeweller, Sept. 1976, pp. 48-51. Work from the Staatliche Zeichenakademie Hanover.

European Jeweller, Sept. 1976, p. 44. The work of German goldsmith Herbert Fischer.

European Jeweller, Sept. 1976, pp. 46-51. Young art from Pforzheim.

European Jeweller, Oct. 1976, pp. 52-53. The work of German jeweller Friedrich Knupper.

European Jeweller, Oct. 1976, pp. 47-49. Alternative jewellery by six German jewellers.

European Jeweller, Nov. 1976, pp. 33-38. Creating in gold: work by Jorn Hant.

European Jeweller, Nov. 1976, pp. 41-43. Work of students at Berufssentrum fur Bau und Gestaltung, Munich.

European Jeweller, Sept. 1976, pp. 63-78. 9th decade at Pforzheim from the pages of "European Jeweller."

European Jeweller, Oct. 1976, pp. 50-51. The work of Polish goldsmiths Jadwiga, Jercy and Marcin Zaremski.

European Jeweller, Oct. 1976, pp. 87-94. Rhapsody in gold and precious stones: Idar-Oberstein exhibition of neckpieces.

European Jeweller, Oct. 1976, pp. 57-59. Pearl jewellery exhibition.

European Jeweller, Nov. 1976, pp. 49-64. Diamonds International Awards 1976.

European Jeweller, Nov. 1976, pp. 45-48. Diamond jewellery of the future.

European Jeweller, Oct. 1976, pp. 71-74. Diamond grading at the Gemological Institute of America, Los Angeles.

TO ORDER: The Resource Center, Crafts Council of Australia, 27 King St., Sydney, 2000.

The Washington International Arts Letter. A letter service and digest concerning 20th century patronage, support programs, and developments in the arts and government, humanities and education, and books and publications. Ten issues a year, $16.00. Make checks to: WIAL. Order from: Box 9005, Washington, D.C., 20003.

Metalsmith is now available at discount — they were selling for $4.50; now $3.00 per copy, which includes shipping. Write: Ron Hickmann, Phoenix Art Museum, 1625 N. Central Ave., Phoenix, Ariz. 85004.

BOOKS

Book of Jewelry Making, John Coyne, ed., the Penland School of Crafts, pub. at $12.95, now $5.95. 503b

Lost Wax Casting of Jewelry, Keith Edwards, Chicago 1974, pub. at $10.00, now $4.95. 539

English Domestic Brass, 1680-1810 and the History of Its Origins, Rupert Gentle and Rachael Field, pub. at $32.50, now $14.95. 540

Art Foundry, Christian Hauser, detailed introduction to the metal casting of objects, from ancient Buddhas and Benin bronzes to the most recent innovations, pub. at $8.95, now $4.95. 542

Early American Silver, Martha Gandy Fales, pub. at $15.00, now $7.95. 623

Georgian Metalwork from Antiquity to the Eighteenth Century, Shalva Amiranashvili, $9.95. 645

El Dorado: The Gold of Ancient Colombia, Julie Jones and Warwick Bray, pub. at $17.50, now $10.95. 658

Nineteenth-Century Romantic Bronzes, Jeremy Cooper, pub. at $1995, now $12.95. 719

The Gold of Ancient America, Allen Wardwell, priced at $4.95. 543

The following books are available from Hacker Art Books, Inc., 54 W. 57th St., N.Y., N.Y., 10019. Include book number, $1.00 postage, 50 cents each additional book. Foreign orders, please add $1.00 per book for postage. N.Y. residents, please add sales tax.

Craft Horizons Magazine, pub. by the American Crafts Council, reg. $18, now $12, bi-monthly, 6 issues. Write: Craft Horizons of the ACC, 44 W. 53rd St., N.Y., NY, 10019.

Beginning Jewelry Notebook, Roger Armstrong. This new text/workbook helps your introductory jewelry students organize their work. Written in a concise, outline format, it provides an organized source on the characteristics of tools and materials, and demonstrates proper uses and procedures. 144 pages, wire coil, $5.95. Order from: Kendall/Hunt Pub. Co., 2460 Kerper Blvd., Dubuque, IO 52001.

How To Finish Beautiful Wood, Watco-Dennis Corp. How to obtain a professional hand-rubbed finish in 30 mins. Write: Watco-Dennis, Santa Monica, CA 90404. Free.

William Dixon Co. Catalog No. 77 is now available. For a free copy, write to William Dixon Co., Carlstadt, NJ 07072.

EUROPEAN JEWELRY SCHOOLS

by Peter Gainsbury

EDITOR'S NOTE: This outline was furnished courtesy of Peter Gainsbury who expressed many personal comments that are to be taken as such.)

SPAIN: Escuela Massana, Calle Hospital 56, Barcelona; Director: Senor L. deGuell. Location: City Centre, very crowded, minimal equipment, high craft standards. Specializing in sheet metal manipulation, die-sinking. Probably the world's best school of enameling. Foreign students accepted; Spanish language necessary.

FINLAND: Landen Kultasepph Koulu, Savonkatu 51B, Lahti. Director: Mr. O. Virta. Location: Inland provincial town. Goldsmithing, silversmithing, engraving, enameling. Foreign students?

DENMARK: Goldsmedehojskolen, Vaerkstedsvej 5, 2500 Valby, Copenhagen. Director: Mr. I.B. Anderson. Location: City suburbs. First class facilities, goldsmithing, silversmithing and short specialized courses. Foreign students accepted. Good craft standard desirable on entry. English spoken.

HOLLAND: Middlebare Technische School, Vakschool Schoonhoven. Director: Mr. P.C. Boeve (Mr. Van Dijk). Location: Small provincial town, first class facilities, probably best jewelry school building in the world, goldsmithing, silversmithing, engraving, watch and clock making. Jewelry retailing. Foreign students? Operates in English, French, German and Dutch.

GERMANY: Fachhochschule Fur Gesaltung, Holzgartenstrasse 36, Pforzheim. Director: Professor Mosney. Location: Main jewelry manufacturing centre. Design School, excellent equipment, jewelry design, silversmithing, and engraving virtually dormant. Foreign students welcome. Often no fees charged. German language preferred, but probably not essential.

GERMANY: Fachhochschule Schwabisch Gmund, Schwabisch Gmund, Director: Professor K. Dittert. Jewelry Contact: Professor Pherre Schlevogt. Location: Small country town, silverware producation centre. Design school, jewelry, silversmithing, glass engraving, electro-chemistry. Foreign students welcomed, often no fees charged. English REQUIRED!

GERMANY: Fachhochschule Dusseldorf, Dusseldorf. Head of Jewelry Dept.: Professor F. Becker. Location: Large city. Jewelry design course. Only fully trained goldsmiths accepted. Foreign students? (There are other jewelry and design schools located at Hanan and Munich.)

GERMANY: Goldschmiedeschule Pforzheim, Pforzheim. Trade school. Jewelry, silversmithing and polishing. Open to all nationalities. Probably German language necessary.

SWITZERLAND: Ecole des Arts Decoratifs, Geneva. Location: City centre. Applied art school. No up to date information.

SWITZERLAND: L'ecole de Bijoverie, Rue General Balfour, Geneva. Location: City centre. Trade apprentices school. Very high craft standards. No design work. Probably open only to Geneva jewelry industry.

SWITZERLAND: Kunstgeberbeschule, Austellungstrasse 60, Zurich. Location: New city centre. Design school. No recent information. Foreign students probably accepted.

ITALY: Scuola di Orificeria, 'Benvenuto Cellini, Valenza, PO. Location: Principal jewelry production centre. Main Italian trade school. Very well equipped. Goldsmithing, gemmology, engraving and stone setting. Foreign students?

ITALY: Instituto Professionale Statale 'Margaritone', Via Margaritone 47, Arezzo. Location: Medieval art city. Mainly craft training. Goldsmithing, special stone setting and electro-plating courses. Foreign student welcome. Italian probably needed. The famous jewelry manufacturers Gori & Zucchi. Also operate a craft school in Arezzo which has very high standards and occasionally admits foreign students. A new school has recently been opened in Milan by the Lombardy Mfg. Jewelers Assn. (Design training in Italy is normally in the academic art schools. For jewelry those in Rome, Milan, Florence, Venice or Padva have been suggested.)

PORTUGAL: Escolade de Artes Decorativas Soames, Das Rels, Oporto. Location: Near centre of principal jewelry production city. Jr. art school for full time students, but evening classes for all ages. Goldsmithing, silversmithing, chasing, engraving, die-sinking, minimal equipment. Foreign students?

BELGIUM: Ecole Bijouterie & Orfeverie, Instiut des Arts & Metiers, 50 Boulevard de L'abbatoir, Brussels. Director: Mons Schott. Location: City centre. Professional school. Evenings only design, goldsmithing, stone setting, engraving, chasing, silversmithing and enameling. Foreign students? Tuition is in French language. (There is another school at Coutrai.)

FRANCE: L'ecole de Bijonterie-Joallerie-Orfeverie, 58 Rue de Louvre, Paris Ze. Director: Mons. R. Canal. Location: City centre. Strictly trade apprentices school. Similar to Geneva school. Other apprentice schools in Nice, Lyons, and Marseilles. Design in France taught in academic art schools.

SWEDEN: Konstfackolan, Vallhalavagen, Stockholm. Location: edge of city. Primarily industrial design school with goldsmithing or silversmithing option. Accepts foreign students. Very strong competition for places.

SWEDEN: Sveriges Julevare Och Goldsmedes Forbund, School at Stralnas, Sweden. Location: in the country. New craft school opened 1972. No further information.

NORWAY: Statens Handverks-Og Kunstindustriskole, Ullevalsveien 5, Oslo 1. Head of Jewelry Dept.: Mr. Elvestad. Location: city centre. Decorative arts school. Industrial design and goldsmithing. Foreign students?

NORWAY: Oslo Yrkesskole, Ostre Elvebakke 2, Oslo 1. Head of Jewelry Dept.: Mr. J. Feli. Location: City centre. Trade school. No age limits. Goldsmithing, silversmithing, engraving, chasing. Foreign students? English spoken, much competition for places. Another school has been opened in Bergen, Norway. No further information.

CANADA: George Brown College, Casaloma Campus, Toronto, Ontario. Head of Dept.: Miss C. Klocke. Location: uptown Toronto. Jewelry arts department of large technical institution. Practical 2-yr. goldsmithing courses and evening courses. Very high standard of commercial craft training.

REPUBLIC OF SOUTH AFRICA: University of Stellenbosch, Stellenbosch, Cape Province, R.S.A. Location: University campus. Approximately 20 miles from Cape Town. Bachelor degrees goldsmithing and gemmology. White university.

REDISCOVER SINKING

by
MARK BALDRIDGE

When initiating the student to raising, most teach to partially sink the metal into a sandbag or wooden form before beginning the long process to a raised form. The most difficult part of raising is coaxing the sides into a vertical position, i.e. getting the sides perpendicular to the bottom. While this feat is no problem to an experienced holloware person, it is quite an accomplishment for an inexperienced student. Just watch them painfully stumble around until the desired result is finally achieved. Personally, it seems a poor introduction to metalsmithing, and may turn off potentially good students. A perfect method for weeding out the undedicated? I don't think so; it is hard to be dedicated to such an arduous task until final results are accomplished.

Although I am only modestly familiar with 'anvil raising' — taking a flat sheet of metal and hammering it with a metal hammer on an anvil, beginning in the middle and gradually radiating out in concentric circles — it seems to be sheer insanity. Perhaps there is some distinct advantage to this technique, but the amount of force necessary to work the form makes it unsuitable for many students. Those thick edges can be achieved by easier techniques. Experienced metalsmiths are familiar enough with the end results to make the process worthwhile, but pity the poor student who is doing this technique simply as as assigned project.

One of the simplest, yet basically unutilized techniques to realize a raised form is sinking. The easiest way to achieve the desired depth is to carve a few basic shapes DEEPLY into an old tree stump or wooden block. The carved forms can vary in size, shape, and depth, until a hemisphere is possible. Begin by sinking with a wooden or leather hammer, annealling frequently, and being careful not to let wrinkles develop. Hammer from the OUTSIDE slowly radiating in concentric circles until you reach the middle. Continue this process until a hemisphere is achieved.

It is three times easier to sink than to raise, so remember this each time you ask whether you should continue to sink or begin raising.

PRACTICAL, INEXPENSIVE, HYDRAULIC PRESSING AND DIE-FORMING FOR THE ARTIST-METALSMITH

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by Marc David Paisin

INTRODUCTION

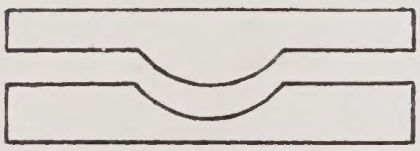
How do you solve the problem of producing a limited edition of hand wrought, hollow forms in a **reasonable** amount of time, and yet have them fit together and look fairly identical without looking machine made? Raising, chasing or masonite die-forming might be an answer, IF you are fast and accurate enough at it. But even then, those methods can't compare with the speed, ease and precision offered by the inexpensive, simple, practical forming of such pieces by use of dies and a small hydraulic press.

The equipment used is simple to build and the processes are easy to master. Using this process, you can quickly form sheet metal into hollow forms that fit together for soldering with a minimum of work and almost no finishing or loss of metal, thereby allowing the use of a thinner gauge metal. Hang in there and we'll cover how to do it all, but for a moment take a look at how it all developed.

DEVELOPMENT

Die-forming of sheet metal originally began thousands of years ago, by utilizing crude grooves carved into stone or wood, into which the metal was freely manipulated by hand and hammered into the depression. Dies were used for handles, spouts and forms that couldn't be made on stakes.

Within the last 150 years, however, die-forming concepts have undergone a tremendous technological evolution. Most important was the creation of male-female conforming dies to create hollow forms utilizing hydraulic pressure or drop hammer presses. (The terms "male" and "female" conforming dies are standard industrial jargon for dies which conform in shape . . . the symbolism is obvious.)



Today, hydraulic pressing and stamping of dies are used very extensively throughout industry to form everything from pots and pans to automobile bodies. Nonetheless, very few individual artist-metalsmiths have utilized this technique on a small, inexpensive scale to produce forms in silver or gold.

To adapt hydraulic pressing equipment and techniques to a small, inexpensive scale, experiments were conducted using an adapted version of the original masonite die technique which was developed by Richard Thomas of Cranbrook Academy of Art. A small, war surplus, embossing press was originally used. This research was initiated by Ruth Girard at the University of California at Berkeley, in 1971 and led to eventual development of pourable epoxy-steel molds on a small scale. I have continued the research since that time, and wish to share the results with you, now.

THE PROCESS

Hydraulic pressing of conforming dies starts with a 3-dimensional model or pattern which is used to mold male and female dies which conform in shape, to the model and each other. The dies are then inserted in the press and sheet metal is placed between the dies. Then hydraulic pressure is applied, in order to press the metal into the desired form. Industrially, most dies are made of steel or pourable epoxy-metal material and the presses are commercially purchased and can generate a pressure up to 3,000,000 lbs. per square inch! Needless to say, equipment and dies like that could cost a mint.

Therefore, adpating the processes for our use, involved making an inexpensive press as well as dies. Utilizing the adapted techniques, you can press gold, silver, copper or brass sheet metal ranging from 24 Ga. to 16 Ga., with little trouble. 24 Ga. is the upper limit, since metal any thinner tends to tear, krinkle, crimp or fold in pressing in these molds. Metal thicker than 16 Ga. creates a need for extreme hydraulic pressure as well as a more sophisticated mold, made of steel. Nonetheless, this range of gauges seems to encompass most of the hollow forms work done by artist-metalsmiths.

Sooooo, let's take a look at how to make a press and dies.

THE PRESS

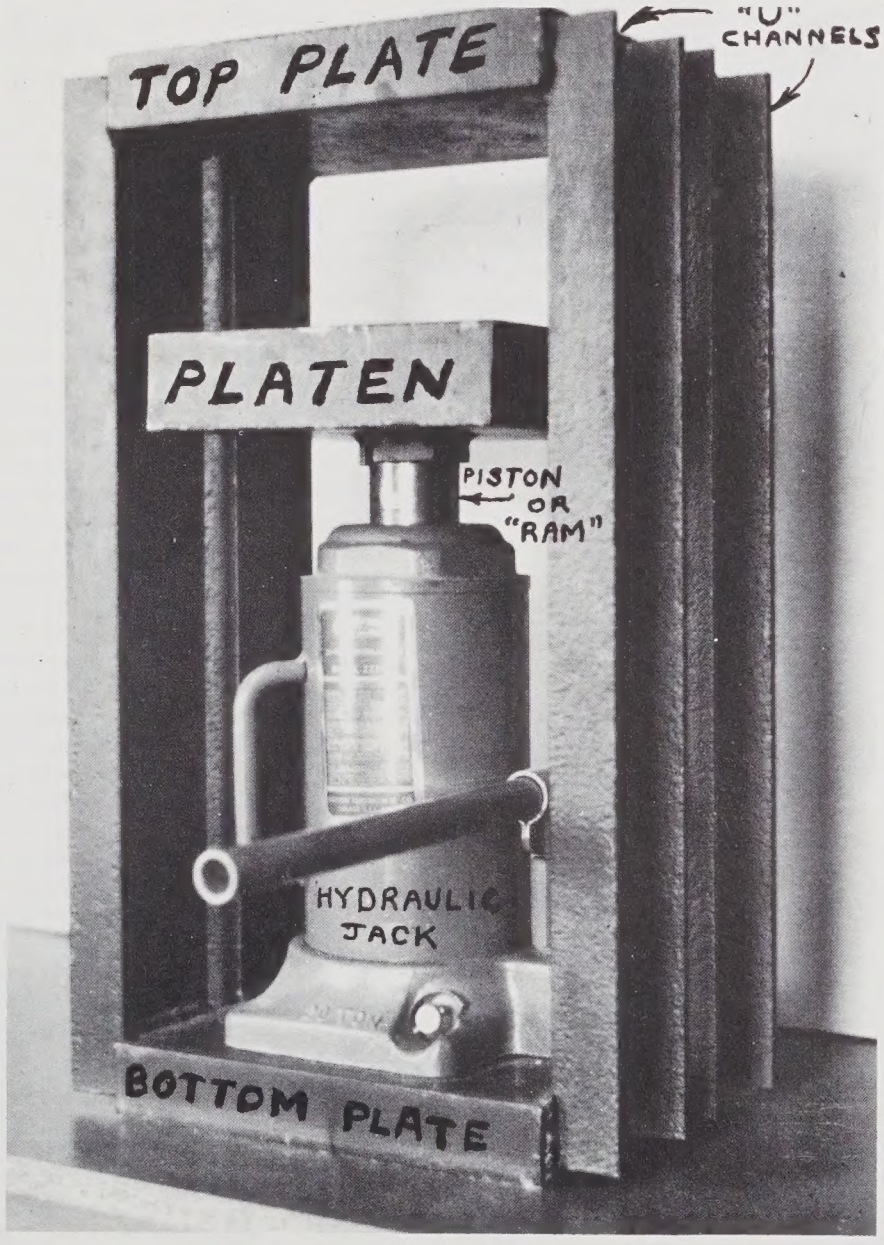
If you have the money, you can purchase a fine, commercial, hydraulic press for about $1,000 or you can make a suitable one of your own for under $50 and some elbow grease. Essentially, all the press consists of is a strong steel frame into which a hydraulic ram is inserted and used to press one of the dies against the other.

A. THE STEEL FRAME

To make a **welded** frame, first scrounge around for your cheapest source of scrap or junk steel, and locate pieces of "U" channel or "L". (They are called "U" or "L" because the piece of steel looks like a "U" or "L" when viewed from the end. Select metal that has a wall thickness of ¼ inch or greater (the bigger the better). You'll need enough for four side pieces, the length of which depends on the height of the hydraulic jack or ram you get, but usually, 6 or 7 feet all total, is enough.

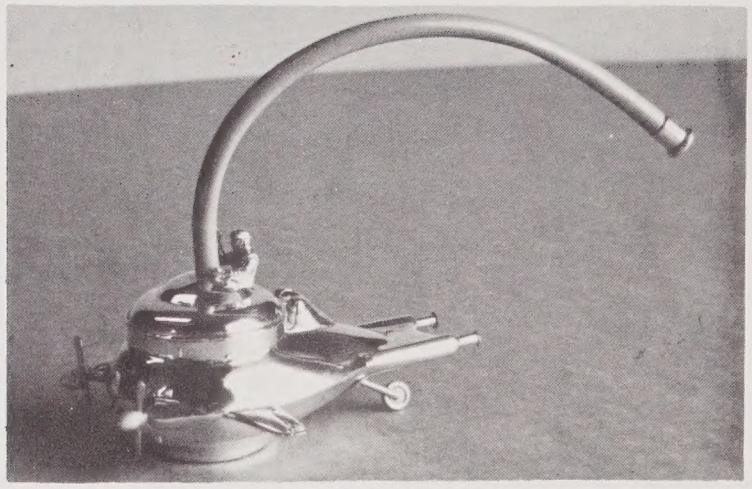
You'll also need 3 pieces of sheet metal, 3/8" thick or greater, to serve as the top, bottom and platen. Here again, find your cheapest source, as the metal need not be new, only flat.

Lastly, you'll need a piece of pipe to weld on the underside of the platen, so the hydraulic ram can fit to the platen. The diameter of the pipe will depend on what diameter ram you come up with. The pipe should be just a little bigger than the ram.



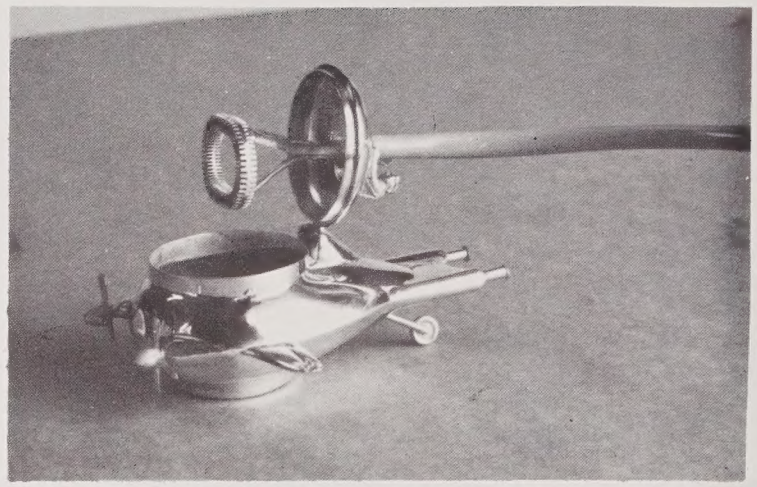
a ILLUSTRATION 1—WELDED PRESS FRAME AND HYDRAULIC JACK.

Soap Bubble Blower



open view

MARC PAISIN



Now, cut and arrange the pieces as in the illustration (1), then weld away . . . and you've got a press frame. What's that? You say you've no welding equipment? Fear not, as you can make a bolt together model, that's almost as strong.

The bolt together frame can be made from hardware store items plus the three pieces of sheet steel for the top, bottom and platen. Most hardware stores carry threaded stock in 2 or 3 foot lengths, and in various diameters. Also, they usually carry washers, nuts, and pipe. That's all you'll need in order to substitute for the "U" or "L" steel. Purchase 4 pieces of threaded stock of ½ inch or greater, diameter, each about 2 feet in length. Also, get 16 flat washers for that diameter stock as well as 16 nuts. Then, you also need 4 pieces of pipe big enough to slide the threaded stock into. Their length depends on the height of the hydraulic jack or ram you end up with (see illustration 2). Lastly, you'll still need the little piece of pipe to fasten to the underside of the platen, as in the welded model.

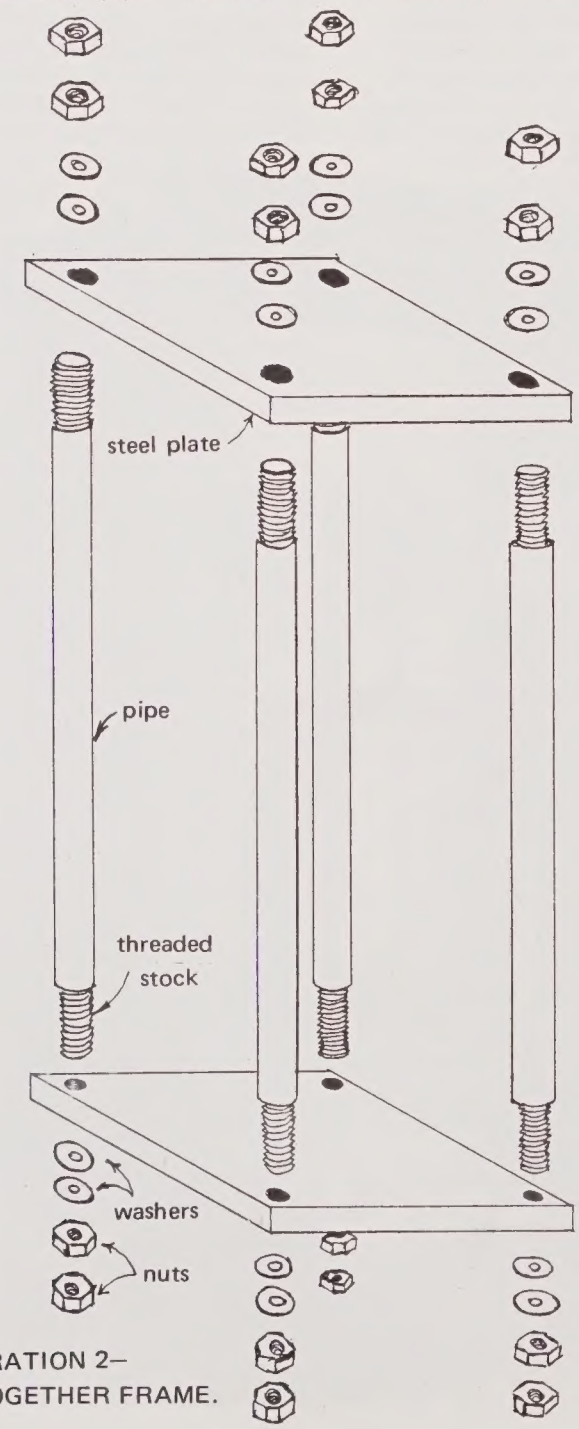


ILLUSTRATION 2–
BOLT TOGETHER FRAME.

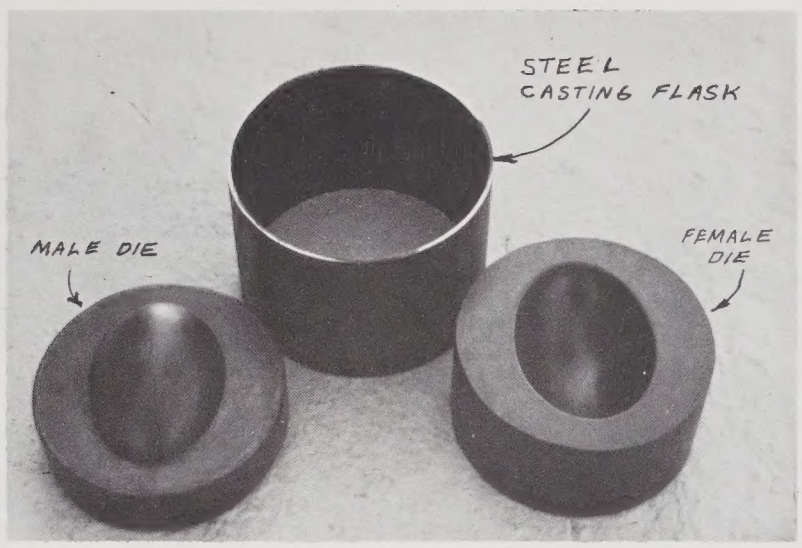
To assemble these parts, start by drilling four holes in the top and bottom pieces of sheet steel. The holes should be just big enough for the threaded stock to slip through. Cut the pieces of pipe to a length equal to the height of the hydraulic ram in its fully extended position, with the platen sitting on top of it. Now, thread two washers and 2 nuts onto one end of each of the four pieces of threaded stock. Then, place the bottom plate on the threaded stock, using the four holes. You can then stand the whole gizmo upright, and place a piece of pipe over each of the four threaded pieces, followed by the top plate. Again, thread two washers and 2 nuts onto each of the threaded stock pieces, tighten them up with a wrench, and you have a bolt together hydraulic press frame.

B. THE HYDRAULIC RAM

Flea markets and junk shops are great sources for used hydraulic jacks for cars and trucks. So, scrounge around for a 20 ton capacity, hydraulic truck jack, (a 15 ton jack will make do, but a 20 ton is preferred, as you won't have to pump as hard.) You most probably can get one for $20 or less, since they are only about $50 new. They are complete and ready to go, as long as you get one in good condition. About the only things that wears out, are the "O" ring seals. Virtually all manufacturers sell a self-explanatory seals replacement kit for their jacks, for about $5, if you should run into that problem.

Just place the jack in the frame, center the platen on the head of the jack, and mark its location on the underside of the platen. Then weld the small piece of pipe on the underside, to locate the ram head on the platen. If you've no welding equipment, roughen and clean both surfaces and use some Devcon Plastic Steel (putty type) to fasten it. Now, you're ready to fly . . . or should I say squash.

As an alternative to a truck jack, you can scrounge around for a used industrial hydraulic ram of 2" or greater diameter, at used industrial supply outfits or hydraulics dealers. The larger the ram diameter, the less pumping force you need, in that the pressure at the platen is equal to the pumping pressure times πR^2, where R is the radius of the ram head. So, bigger rams mean less effort. If you do locate an industrial ram, it most probably will have a fitting on it for a pressure gauge. If so, get a cheap used one, and you can then determine just what pressure you are pressing at. Most of the pieces I've done have been pressed at 26,000 lbs./sq. in. or less.



MARC PAISIN

DEVCON DIE AND FLASK

DIES

Many dies are suitable for hydraulic pressing, ranging from the use of a conventional masonite die with the addition of a male die, to the use of cast male and female conforming dies of metal, pourable epoxy-steel or fiberglass. Which do you use when? In general, the greater the detail and the tighter the curves, the more the need for the dies to be made of hard material such as metal or epoxy-steel and to have male-female conformity, especially if ten units or more are to be produced.

Use the adapted masonite die only when you have gradually sloping curves of large radius, and not too much detail. This is because you have a male die and an outline of the female die, but no female conformity. This inexpensive die is made from a sheet of tempered masonite fastened to ¾ inch pieces of plywood, with the outline of the piece cut out of the masonite and plywood. For pressing, it is adapted by adding a male die and locating pegs made from large nails. The male die can be sculpted from hardwood such as oak or maple or it can be cut and filed from a thick piece of aluminum or cast in brass, bronze, aluminum or the like. To prevent deterioration of the forming edge of the masonite, a 16 Ga. piece of sheet steel can be cut with a jeweler's saw to produce a template outline, if you wish to produce many units.

Far and away, the best dies are the cast male-female conforming dies. They have the distinct advantages of being made of harder materials (therefore allowing more units to be produced with better detail and slower deterioration of the dies) as well as providing full forming with male-female conformity. Additionally, they too are relatively inexpensive.

I recommend use of pourable epoxy-steel as a die material, as it is quick and easy to make. Start out by sculpting the model or pattern in just about any material ranging from plasteline clay to wax, plaster, wood, plastic, metal, etc. Be sure there are no undercuts in the form. Then if this material can take about 160 degrees F. or so, you can follow the steps below, to pour the cast die. If, however, it is made of plasteline clay, wax, or some other substance that can't take the heat, then simply coat it with a release agent such as silicone spray or light oil or even vaseline, and pour a plaster mold which you can use to pour the case die. (Plaster or wood dies should be given a coat of lacquer before proceeding, since this will seal their porous surface and allow the model to release easier.)

The epoxy-steel, or "plastic steel" used, is made by Devcon Corporation, of Danvers, Mass. Devcon produces a fine line of plastic steel products for making tools, jigs, fixtures, metal forming dies, models, molds, foundry patterns and for repairing machinery. I recommend use of their PLASTIC STEEL B, liquid type, (Stock No. 10210). It comes in 1, 4 and 25 lb. cans, and costs about $5/lb. in one pound cans. It is available at most large hardware stores and from tooling supply houses. It is made from 80% steel powder and 20% epoxy resin binders. The "B" liquid type is used for pouring the dies, since it is very liquidy when mixed for use. It has a compression strenght of 18,000 P.S.I. with ultimate tensile strength of 10,000 P.S.I. and a Rockwell hardness rating of 93. It can be sawed, filed, tapped, drilled, ground and threaded and generally worked with metal working tools.

Now, let's proceed in making the dies. First, take your model or pattern or plaster mold and put it in a small, strong container of some sort. (I usually use a short section of old pipe or a metal flask from the centrifugal casting rig.) Then, lubricate the pattern as well as the inside walls of the container with the release agent provided in the Devcon kit. Now, just follow the included instruction sheet in the kit, and mix up the plastic steel material. Pour it into your mold, being sure the surface you are using is not on an angle, so that the top and bottom surfaces of the plastic steel die will end up being parallel.

The Devcon material will harden at room temperature and be ready for use in about four hours. Assuming you've made no undercuts on your model and that you put enough release agent on it, your die should separate from the model and container with little trouble. If you started from a male form, you now have a female die, whereas if you started from the plaster mold, you'll have a male die. In either case, you can now repeat the same procedure and pour the other die by lubricating the surface of the Devcon die and the walls of the container and pour in more Devcon. If you plan to press 18 Ga. or thicker metal, you'll have to allow some room for the metal in the die, before pressing. Since Devcon can be filed, sanded, etc., simply take down the edge of the male die to allow for the thickness of the metal, before proceeding to pressing.

Cast metal conforming dies can also be used quite successfully for pressing, utilizing ordinary foundry techniques, if you have access to one. I'm purposely not describing how to do that, since we are talking about a regular lost wax casting or sand casting in bronze, aluminum or the like.

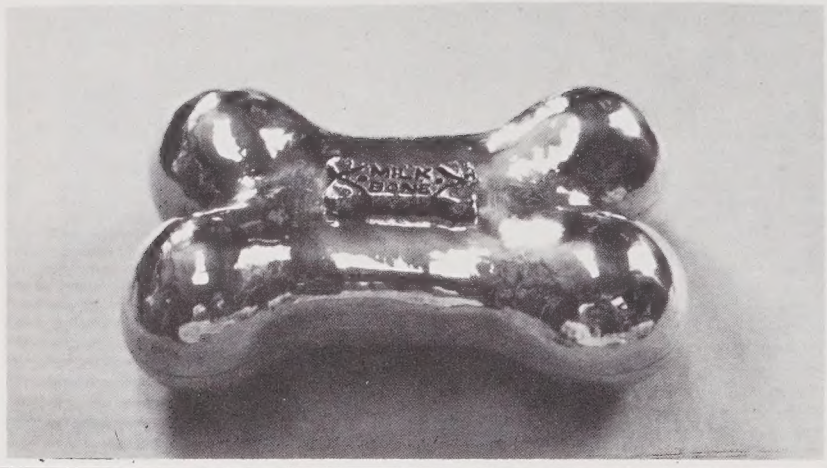
However, if you've been able to make your model from a piece of aluminum or the like, or if you have made a plaster mold from your original pattern, you can pour a simple, inexpensive, highly usable mold from zinc, without the use of a foundry. Find a junk source of zinc printer's plates and simply melt them down and pour directly over the aluminum or plaster, in a container. Since zinc melts at below 800 degrees F, it can be melted in a can, with a torch and cast without any further hubbub. If you have the aluminum male model, it can be used directly in the press along with the zinc female. (They will mate, even though different species.) If, however, you poured the zinc into the plaster, you can use the cooled zinc die to pour the other zinc into.

PRESSING THE FORM

To press a form, just follow these steps:

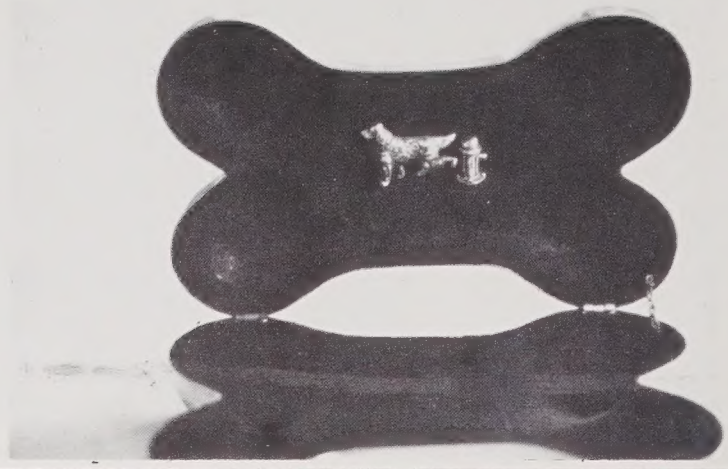
1. Cut a piece of the desired sheet metal, big enough to cover the cavity in the female die plus about 3/8 inch extra all around the outline of the form to be pressed. This allows for metal to be drawn down into the female die. The bigger the extra flange, the better. This metal can be cut off later and re-used for casting, etc.
2. Anneal the metal.
3. Place the female die in the press, inside the pipe, flask or other strong container used to cast the die in. (This metal band or container will usually prevent the Devcon die from shattering or cracking if over-pressed.
4. Coat the surfaces of the dies with a lubricant of thin oil or silicone spray to aid the metal in easing into the female die and to avoid deforming the edges of the die.
5. Place the sheet metal on top of the female die, and center the male die on top of the female die.
6. With this assembly in the press, begin pressing by hand pumping the hydraulic ram.

Milk-Bone Box



openview

MARC PAISIN



As you start pressing, watch for signs of crimping, folding or krinkling in the metal. When or if these appear, stop pressing and remove the sheet metal from the die.

7. Use a leather mallet and anvil to smooth out the crimps and return the sheet metal for continued pressing. Repeat this process as necessary. If you've had to remove it 3 or 4 times, I suggest that you again anneal the metal.

Most forms will pick up the complete detail in the pressing. However, additional detail can be rendered in a jiffy, simply by planishing or tooling the metal, right on the male die, since the Devcon can safely take the hammering.

If you intend to produce many units in the die, you may want to cut an outline of the form in 18 or 16 Ga. steel, which can be set on the female die, thereby slowing down the deterioration of the forming edge of that die.

OTHER USES FOR THE PRESS

A. FOUND OBJECTS AS DIES

Try using found objects of any hard metal or cut metal to shape and press into a piece of annealed sheet metal backed up by a sheet of lead or hard rubber. You'll find that the images are quite distinct and can be very dynamic, depending on your design.

B. PRESSED PHOTO IMAGES

You can also use the press to create photo images pressed into the metal. To accomplish this, simply select a photo image or line drawing, etc., which has fairly high contrast. Then get a magnesium or zinc printer's plate made from the art work, at a photo engraving shop. Such shops are common and the cost should be about $10 or so, for a small plate. However, you can probably get quite a few images on one plate.

Then, place the annealed sheet metal on top of the etched plate, topped by a sheet of lead or hard rubber, and press away. You'll find you can obtain a fairly crisp image transferred to the metal.

CONCLUSION

I'm sure there are some important details I've forgotten to mention and that there are other details I've purposely left out so as not to complicate this presentation needlessly. However, it is my hope that the information contained here is clear enough that you can get started, inexpensively, in hydraulic pressing. Since the adaptation of this technique is fairly new, I encourage you to experiment and find newer and better methods and equipment for pressing, as I'm convinced its application opens up a whole new exciting technique for our use.

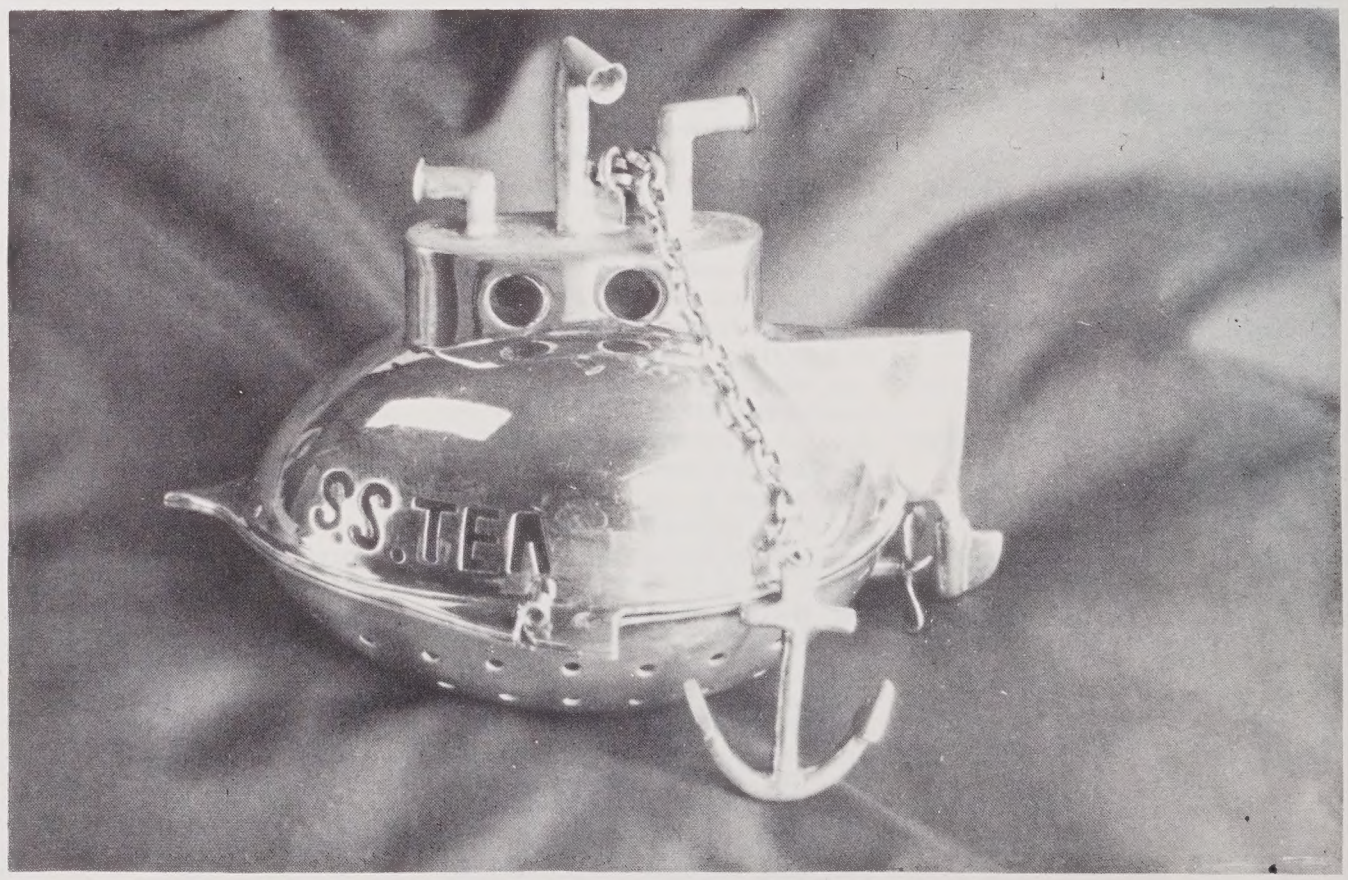
So remember — "If it'll stand still . . . PRESS IT!"

This project is supported by a grant from the National Endowment for the Arts in Washington, D.C.

Presented at the Society of North American Goldsmiths Conference in Seattle. These technical papers also appear in issues 13-16 of the Goldsmiths Journal.

MARC PAISIN

"S.S. Tea"
Tea Caddy



THE GOLD INSTITUTE

GOLD GLASS: SAVES ENERGY IN ARCHITECTURE. . .

courtesy: The Gold News, The Gold Institute, Volume 2, Numbers 3 and 4, May 1977 and July 1977

The Gold Institute is the worldwide association of suppliers of gold and gold products. The functions of the Gold Institute are to: encourage the development and use of gold and gold products, help develop markets for gold and its products, foster research and development related to the present and prospective uses of gold, spread knowledge and understanding of the uses of gold, develop methods for improving the welfare of the gold industry and to collect and publish statistics and other information about production, distribution, marketing, consumption and the uses of gold and gold products. The Gold Institute serves: governments and central banks engaged in regular or commemorative coinage, designers and makers of jewelry, manufacturers with particular attention to executives who choose or specify metals to be used in products, industrial design engineers and scientists who benefit from knowledge of new gold technology, science-oriented industries such as the space, environmental and ecological firms which can advantageously use gold, electronic, electric, photographic and other industries for which an adequate supply of gold is vital, government research and statistical entities in the fields of metals and national defense, professional, technical and research institutes, and numismatists, fine arts galleries and collectors of articles containing gold.

The Gold Institute advances the interests of the gold industry by: developing information from worldwide sources on gold uses, research, technology, markets and reference data. Its means of distribution include: The Gold Institute Letter, New Gold Technology, Modern Gold Coinage, personal visits, news for technical and commercial publications, brochures and educational materials, responses to inquiries and reports of statistical data.

For further information, write: The Gold Institute, 1001 Connecticut Ave., N.W., No. 1140, Washington, D.C. 20036.

Twenty-four karat gold in glass windows conserves energy, cuts utility bills, saves money and improves a building's appearance.

New office buildings under construction or just completed in Canada, Europe and throughout the U.S. are now using small amounts of gold in the windows to block out the sun's heat rays while admitting light rays. Air conditioning costs are dramatically reduced and glare is substantially lessened, adding to the reading comfort of office personnel.

Sanders Campbell & Co., developers of the new Campbell Centre Office Complex, estimate that on an average summer day, the gold reflective glass in their office complex saves 31,400 kilowatt hours of energy . . . a figure equivalent to the energy required to light houses on 50 city blocks every night for a week. The Centre is in Dallas, Texas.

Gold is an important energy saver and is increasingly used to shield interiors of buildings from summer heat and winter cold. Thin gold film on windows insulates interiors by blocking transmission of heat through glass. As costs rise for energy to heat and cool buildings, gold glass is increasingly attractive economically, reported Richard L. Davies, Managing Director, Gold Institute.

An Ontario government official confirmed this: "We require all new construction to use energy saving technology," he said, "and gold glass is best for reducing heat passage through windows."

In the winter, when the sun's warmth is minimal, the gold glass bounces the internal heat back into the rooms, retaining the warmth within the building.

With renewed worldwide emphasis on energy conservation, interest in the gold glass is growing rapidly. One of the largest glass manufacturers in the U.S. has just announced the addition of a gold reflective glass to its product line. Solarban 490 is the gold reflective, insulating glass forecasted to be an extremely popular energy saving product. W.C. Payne for PPG Industries, Inc., One Gateway Center, Pittsburgh, PA, 15222, explained the development of this glass when he said, "gold reflective glass is the highest performing glass available, and energy conservation efforts put a great premium on high performance." In the case of Solarban 490, high performance means a 17% visible light transmission, blocking out over 90% of the heat rays during the summer while providing over three times more insulating value than ¼" glass during the winter.

U.S. companies which have been making energy saving gold glass are ASG Industries, Inc., P.O. Box 929, Kingsport, TN, 37662; C-E Glass, Combustion Engineering, Inc., 825 Hylton Rd., Pennsauken, NJ, 08110; and Environmental Glass Products Division of Shatterproof Glass Corp., 4815 Cabot Ave., Detroit, MI, 48210. European companies producing this glass include: Glaverbel Glass, Chausse de la Hulpe 166, B-1170 Brussels, Belgium; and Flachglas AG Delog-Detag, Otto Seeling Promenade 2, 8510 Furth, German Federal Republic.

Depending on the method of deposition, one ounce of gold is used to coat between 400 and 1,000 sq. ft. of glass. Gold glass insulating units cost $5-$9 per sq. ft., compared to $2.25-$3.00 per sq. ft. for conventional, non-insulating, ¼" thick windows. But the conventional windows turn out to be more expensive, as the gold coating quickly saves more than it costs.

As a prudent financial institution, the Royal Bank of Canada has approximately 2,500 troy ounces of gold in the 27,000 windows of its new building in Toronto in order to reduce energy costs while adding to the prestigious appearance of the structure. Bernard Himel of Webb, Zerafa, Menkes, Housden, architects of the building, explains that "energy considerations were a primary concern in choosing gold reflective glass."

To the passerby, though, the visible reason for using the material is for the remarkable beauty created. Howard Koblenz of Peters and Koblenz, architects of the 12-story Plaza Tower of West Port Plaza, St. Louis, MO, said, "we used gold reflective glass for its esthetic drama".

Jan Dargatz, Director, Office of University Relations, Oral Roberts University, Tulsa, OK, agrees with Koblenz about the esthetic value of gold. The school colors are blue, gold, and white — what better way to display one of the school colors on campus than by using real gold. The chapel and a 200" Prayer Tower now use the handsome glass, and several new buildings are planned, with gold reflective windows.

ASG, C-E, and Environmental Glass Products have several types of gold reflective glass. The types vary slightly in visible light transmission, from as little as 6% to as much as 32%, with subtler differences in insulating value.

William Hoff, architect of the gold glass encased Sherman Building, Denver, CO, predicted that because of the energy situation, "the trend toward gold glass will increase dramatically in the near future." And he confirms the opinions of others: gold reflective insulating glass is the most energy efficient glass that money can buy.

UPS SHIPPING POLICY

by Mary LaPrade

According to the Richmond, Va. office of the United Parcel Service, their national policy will not allow acceptance of anything that has a section of over 50% silver. Furthermore, this ban is extended to gold bouillon, but does not apply to gold jewelry. At the present time, this rule is constantly violated by museums and metalsmiths despite the requirement that contents be listed on the outside of the package.

The unusual thing is that UPS will insure packages up to $4000 (provided it does not contain any section of more than 50% silver). Basically, UPS does not wish to handle irreplaceable one-of-a-kind pieces and is not equipped to do special handling. The UPS office was unable to answer whether the insurance would be canceled if an "illegal" package were discovered. As a warning to members, do not risk your work; use other services such as Parcel Post, Air Express, or local shippers instead.

AUTOBIOGRAPHY

by Marc Paisin

"Just Cruisin' "
MARC PAISIN

I am a native Californian, now 31 years old and living for the past 10 years in Berkeley. I've always liked making things with my hands. Maybe that comes from my dad who was an aircraft sheet-metal smith, or from my grandfather who was a cabinet maker.

When asked to write this autobiography, I first had to deal with the question of just what was pertinent to include in it. Well, let's see . . . I remember getting into trouble at about age three or so, for biting the neighbor's Collie dog on the rump . . . but then again, he bit me first. I must say that from the word "go", I've always been interested in building things and taking things apart so as to see "What makes it tick." Even as a little kid, I'd take my new toy and promptly break it apart, fascinated to see what it was inside it that made the little thing run, rather than play with it in the normal way. Though I began to get a great understanding of how these little doodads were put together, it's needless to say that . . . I didn't get too many new toys.

As I grew older, I retained an interest in tinkering with machines and developed an interest in art and humor. These interests persisted through undergraduate college at California State University at San Diego, where I got a B.S. degree in 1968. I minored in art and engineering, did some acting and comedy and worked for I.B.M. to put myself through school.

Somewhere in there, I also got the hair-brained idea that I could be happy practicing law full time and doing my artwork in my spare time. When I got to law school it soon became clear that that wasn't the thing for me. I felt like I was going to go batty just reading law books and handling no other materials than paper, pencils, and books. Consequently, I went back into art and took my first jewelry and metalsmithing courses while I was still in law school at the University of California at Berkeley. (My earlier art background was in sculpture, with emphasis in large metal casting.) These courses seemed to "fit" and soon I was pursuing a master's degree in design at Berkeley. Throughout the master's program and to this day, I remain enthused about the making of a tool or the development of a process almost more than I'm concerned with the piece itself. My interest in gadgets and machinery came through in my master's thesis, too, which was a practical manual on electroforming for the artist-craftsman.

It was also at Berkeley that I started working on adapting the hydraulic press, on a small scale, as a new tool for the metalsmith-jeweler. My instructor, Mike Lacktman, had purchased a Navy surplus press and was interested in its development as a tool for metalsmiths. So, another graduate student, Ruth Girard, did her thesis on development and use of the press and dies for metalsmiths and we all participated in the project. Since then, I've continued using the press and developing and building presses and finding new mold materials.

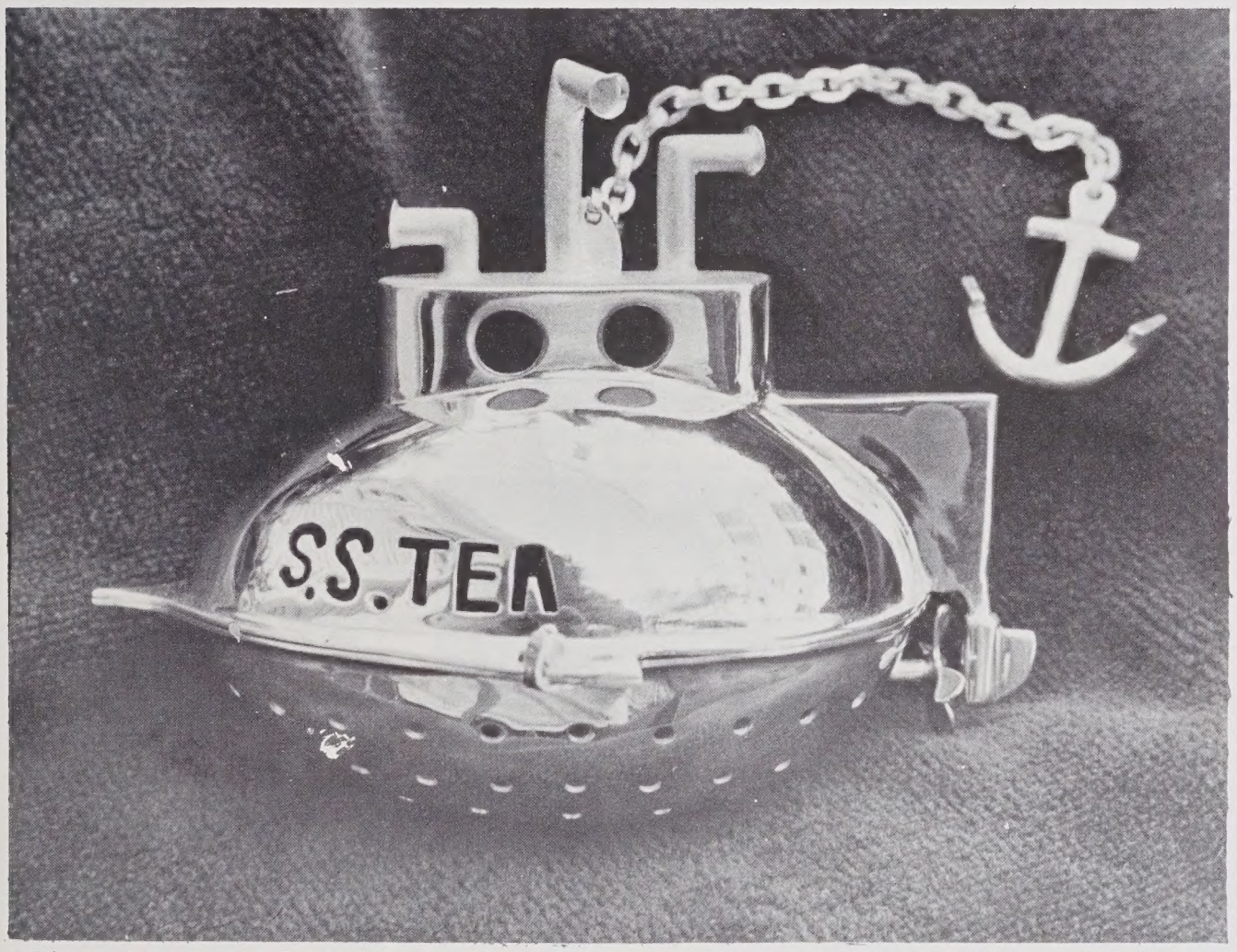
Most of the pieces I now create utilize the hydraulic press to die-form some part or parts of the piece. (The paper I presented at the recent SNAG conference in Seattle, and which is reprinted elsewhere in this issue of the JOURNAL, has pictures of some of those pieces.)

I want to emphasize that I do not see the use of the hydraulic press or any other technological tool as a substitute for the knowledge of and experience of metalsmithing hand processes. There simply is no substitute for knowing how to raise or do repousse, though pressing can do these jobs. The way I see it, one needs to first learn these hand processes well, only then can one wisely use the hydraulic press or another new tool, WHERE IT FITS THE SITUATION, to make the job

"Blowing Bubbles".
MARC PAISIN

"S.S. TEA", Tea Caddy, sterling

MARC PAISIN



quicker, easier and more efficient and to allow further exploration of the form developed. For instance, in my pieces the press is used to quickly produce one or two of perhaps 20 parts that go into the thing and often I've hand raised the original for the die. (Well, off the philosophical soap box and back to the next chapter of the chronology.)

I graduated from law school in 1971 and shortly thereafter completed the master's program. I passed the Bar Exam, but continued to do my metal and glass work, and teach metalsmithing. I taught at the U. of Calif. at Berkeley until Ronald Reagan saw fit to destroy the Design Dept., then at Laney, a jr. college in Oakland, Calif., as well as at a couple of city-sponsored art programs. Teaching five classes a week to non-metalsmithing majors with one ball peen hammer and one mandrel for 40 students soon took its toll.

By 1975, I was so burned out on teaching that the bottom dropped out of my own work. You see, at that time, the most creative idea I could muster, after classes, was how to transform hard, raw spaghetti into limp stuff by utilizing water and heat. So I decided it was time to quit teaching and just do my own pieces and practice law part time, all from one location.

I now have an art studio-law office in the industrial section of Emeryville, Calif. (there is no other section). Emeryville is between Berkeley and Oakland and my studio is on Picturesque Park Avenue. (That's down the street from the Kentucky Fried Chicken and across the street from the Del Monte fruit canning plant and kiddie-corner to the Morehouse Mustard factory.)

About a year before I got the studio, I was become acutely aware of the many legal problems that relate particularly to artists and craftspersons. I neither know nor appreciate the difference between the terms "artist" and "craftsperson". I don't care whether people call me an artist or craftsman because the simple truth is that I make things and I enjoy making things and I often am making a statement in the things I make. Call it what you will. In any event, I became so interested in these legal problems that I became one of the co-founders of the Bay Area Lawyers for the Arts. It is a volunteer lawyers' group furnishing free legal aid to individual artists and art-related groups in the San Francisco Bay Area. With a little foresight and advice we help artists and craftspeople avoid getting screwed by galleries, customers, museums or the I.R.S., and we help them to obtain copyrights or designs and the like.

My metalwork in the studio and my part-time practice of law feel good together. Each piece I do comes from an idea in my head which is totally uninvolved with "whether it will sell or not". If I like the idea I make the piece. I only see a few legal clients, and because of that, each person is truly an individual to me, and I'm glad I can assist them.

My direction in metalwork, at the moment, comes from my reaction to my experience that so many of us take metal so seriously. I feel no reason why precious metal can't be used in high-quality, handcrafted pieces that have whimsy, lightness, humor and joy as their theme. My hope is to create high quality, one-of-a-kind or small editions of pieces such as toys, containers or devices in precious metal that have some moving parts and are fun to play with and crave to be touched. At the moment, my projects are a hydraulically pressed, sterling silver whale that blows soap bubbles out its spout, and a tea-ball (or tea infuser, as it is formally called) in the shape of a duck. Pinch the duck's bill, and it opens up to put the tea leaves in.

Also, since I've stopped teaching, I relish the occasional foray from the studio to travel and give a workshop or demonstration of hydraulic pressing. I find that the energy, enthusiasm and creativity generated by students is really nourishing.

The recent SNAG conference in Seattle was really a treat for me, and I look forward to next year's conference and a year of fun with metal.

STUART DEVLIN

by Carole Hedley-Saunders

In the years that Stuart Devlin has been working in the United Kingdom he has established for himself an unrivalled position as "arguably the greatest living silversmith", (Investor's Chronicle). In 1966 he was made a Freeman of the Worshipful Company of Goldsmiths who acclaim him as "the designer with the Midas touch" and in 1972 they honoured him by electing him a liveryman.

Stuart Devlin's success has been achieved by his extraordinary capacity for hard work allied to a truly remarkable talent. Like the great silversmiths of the past, whose mantle he is now assuming, his talent genuinely owes nothing to a specific school of thinking, but constantly evolves new and completely different ideas in both design and craftsmanship.

Born in Geelong, Australia, Stuart Devlin knew at the age of 14 that he wanted to be a designer. He won his first scholarship to the Gordon Institude of Technology at the age of 13. Later he studied at the Royal Melbourne Institute of Technology when he won an Art Diploma with the highest marks ever awarded, after only year of study, instead of the usual three.

This charming Australian has been winning scholarships, diplomas and prizes ever since.

In 1958 Stuart Devlin was awarded three scholarships which took him to the Royal College of Art in London, where he studied light engineering design and gold and silversmithing. He left the R.C.A. as the only student to obtain honours diplomas in both subjects. He also won the Thesis Prize for that year.

Two years later, on yet another travel award — The Harkness Fellowship — he went to America where he was provided with his own studio at Columbia University which he made his headquarters. For two years he studied and lectured at many universities in the U.S.A.

During this period, Stuart Devlin was able to develop his interest in sculpture and achieved the rare distinction of holding a one-man exhibition of his own work at the Thibaut Gallery in New York and, in 1965, at the Terry Clune Gallery in Sydney. If Stuart Devlin had not turned to silversmithing he may well have been an outstanding sculptor and today's collectors of rich, contemporary gold and silver must consider themselves fortunate that he chose to be a gold and silversmith.

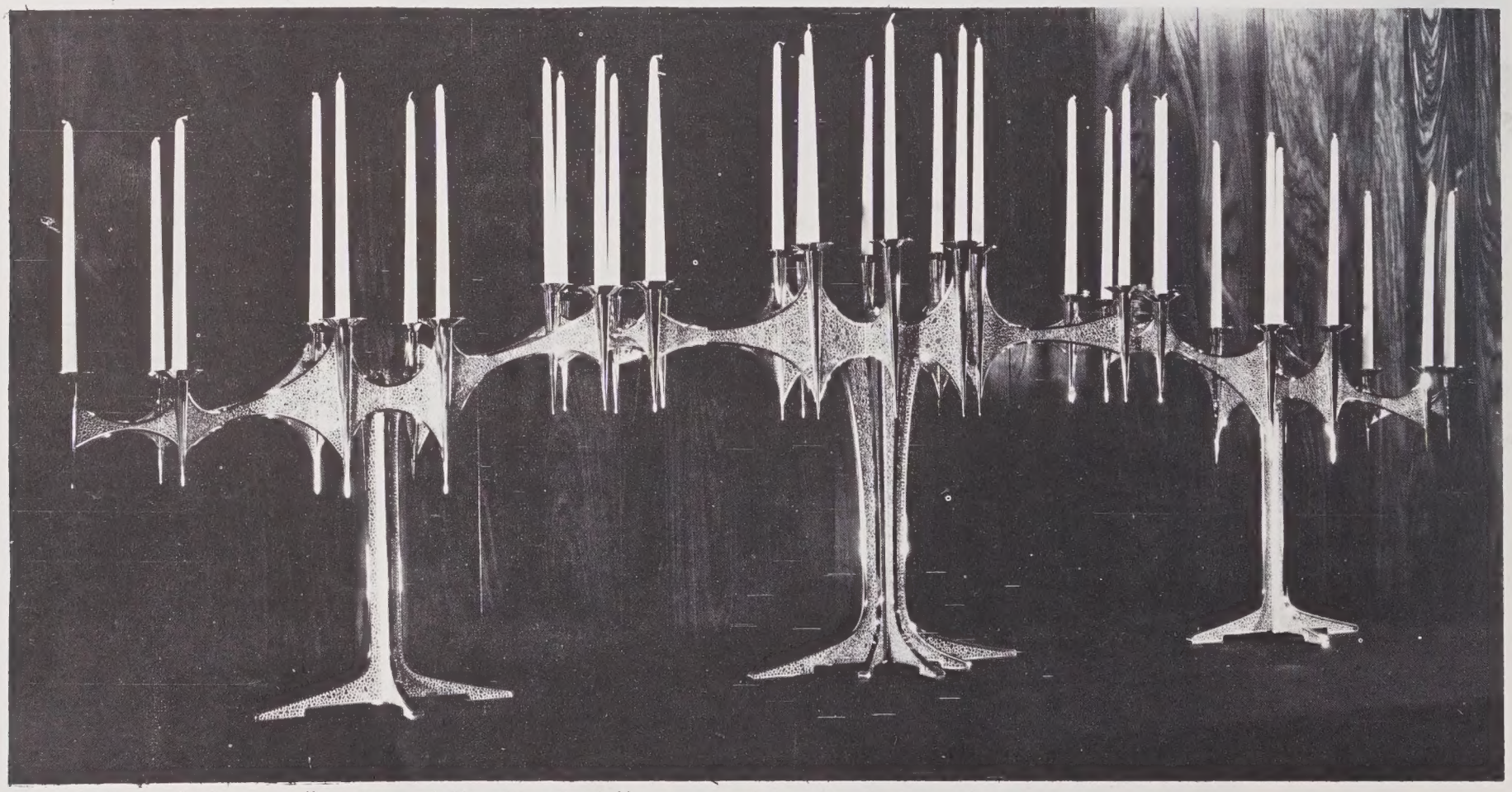
It was while Devlin was in America that he met the beautiful Kim Hose from West Chester County, New York, and in December 1962, six months after leaving America, he returned there to marry her.

The Devlins made a honeymoon journey back to Australia where he embarked on what was then his biggest commission — the designing of his country's new decimal coinage. The winning of this commission from five other top designers was an exciting stimulus for Devlin as it means that every Australian now carries some of his design in their pockets. The six coins depict the wildlife family of Australia. Their originality, meticulous workmanship and precision of finish have made people aware of the qualities which make Stuart Devlin such an outstanding designer.

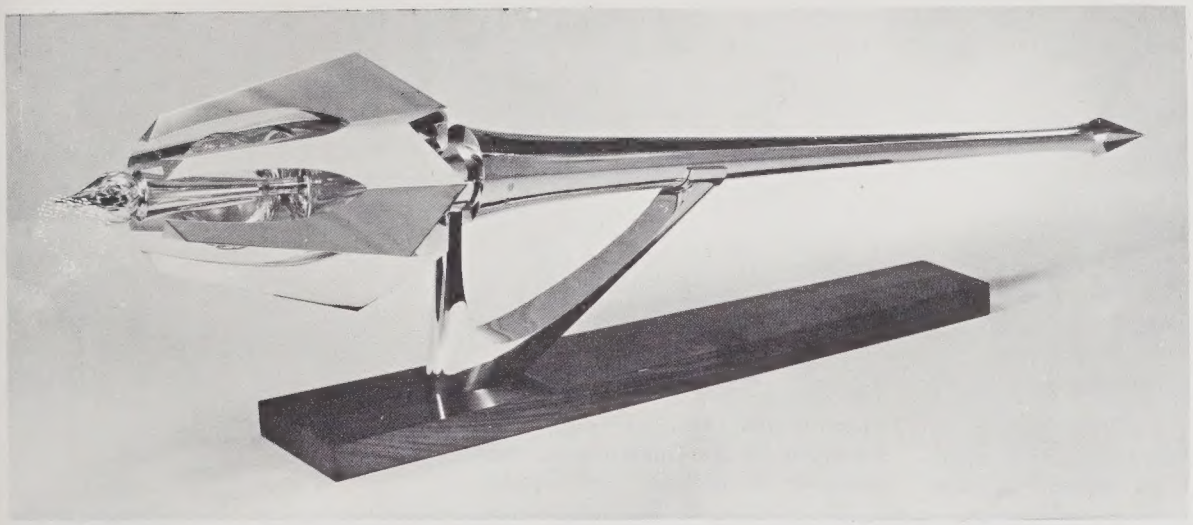
It was while he was supervising all the stages of the die-making of the coins at the Royal Mint that he finally decided to make his home in London. Like other great silversmiths of the past, Devlin was attracted to London because this city is the traditional world centre for the silver and gold craft where there still remains unrivalled tradition and skill.

Though he is based in London, travelling gives Devlin many of his ideas, and, although he does not consciously use the images he sees, they are sometimes apparent in his work. For instance, in a gold and silver dinner bell, purchased by the Worshipful Company of Goldsmiths for their permanent collection, he found himself using the contours and richness of a temple spire in Bangkok.

Richness in design is to be seen in all Devlin's work and, even though 90 per cent of what he makes is in the traditional manner, he has perfected new techniques which give him a



Stuart Devlin, candelabrum, sterling silver and silver gilt, approx. 9' long, commissioned by the Duke of West minster.



Stuart Devlin, mace for the University of the Pacific, U.S.A., 4' long.

wider scope for his craft. Because of this, he is able to design and make pieces which have never been possible before. His 'trademark' seems to lie in the rich textures and the colours he develops within the limitations of gold and silver, giving each piece an added sense of aesthetic individuality.

Devlin feels that the only justification for using silver must be that it enriches our lives — if it does not fulfil this function it has no validity and one might just as well use stainless steel. As a result, his work is a source of great delight to those who have become disenchanted with the austerity of the Scandinavian influence.

The Stuart Devlin Showrooms contain a magnificent permanent display of his work and, because of his vivid imagination, the collection is constantly changing. From the tiniest paperweight to the most fabulous centrepiece, his attention to detail and meticulous craftsmanship is abundantly evident.

Devlin's design covers a wide field and ranges from impressive ceremonial regalia, maces for universities, to salt cellars and perhaps his most immediately appealing pieces which are elegantly executed golden eggs containing many different precious stones. A designer's stock in trade is his ideas, but he must also have the ability to translate these ideas into tangible reality. This ability must surely be one of the major reasons for Devlin's success.

Now Devlin has turned his attention to gold which, with its richness and adaptability, is the natural material for his intricate and beautiful designs. His 18k gold jewelled Easter Eggs, containing or decorated with fabulous precious stones, are prized as ever were the treasures of the Czars.

As an almost inevitable progression of his work to date, Devlin decided, in 1971, to design jewellery. Typically, he did not approach the subject without taking a whole new look at this rather overcrowded field. The result was surprising.

His jewellery has an abstract quality, he uses stones of complicated cut, and he surrounds them with what appears to be filigree; on close inspection one can see that the filigree is comprised of tiny human figures supporting the stones. Thus, reminiscent of Ancient Greece, he calls his jewellery 'Caryatic'. His jewellery, like all of Devlin's work, is surprising, fascinating and intrigues in its sense of elegance and humour.

In December 1975, Stuart Devlin sprang a surprise of a new kind when he showed his first collection of carved and gilt rosewood furniture. This was the culmination of several years of thought after he realised that there was virtually no alternative to buying antiques if one was to acquire furniture which was more than just a functional item in the home or office.

Devlin's primary aim has always been to enrich the way we live. Therefore, on reflection it is not so surprising that he has turned some of his attention to proving that new furniture can again add richness to our experience.

A large number of patrons who have acquired Devlin's work in silver and gold see it not only as an enrichment to their lives, but also as an investment — almost certainly his furniture will come to be viewed in the same light.

A PARTIAL LIST OF AWARDS & COMMISSIONS INCLUDES:

1960—The Thesis Prize of the Royal College of Art.
1963-64—Designed the New Australian Decimal Coinage.
1972—Commissioned by H.R.H. Prince of Wales to design and make his gift to the Queen and Prince Philip on the occasion of their Silver Wedding Anniversary.
1972—Designed and made Surprise Sphere to commemorate Royal Silver Wedding Anniversary.
1972—Designed and made cutlery used by M. Pompidou to entertain H.M. The Queen on her State Visit to Paris.
1973—Designed and produced master patterns for series of 50 ignots depicting 1,000 years of British Monarchy.
1976—Designed the Ethiopian Coinage.

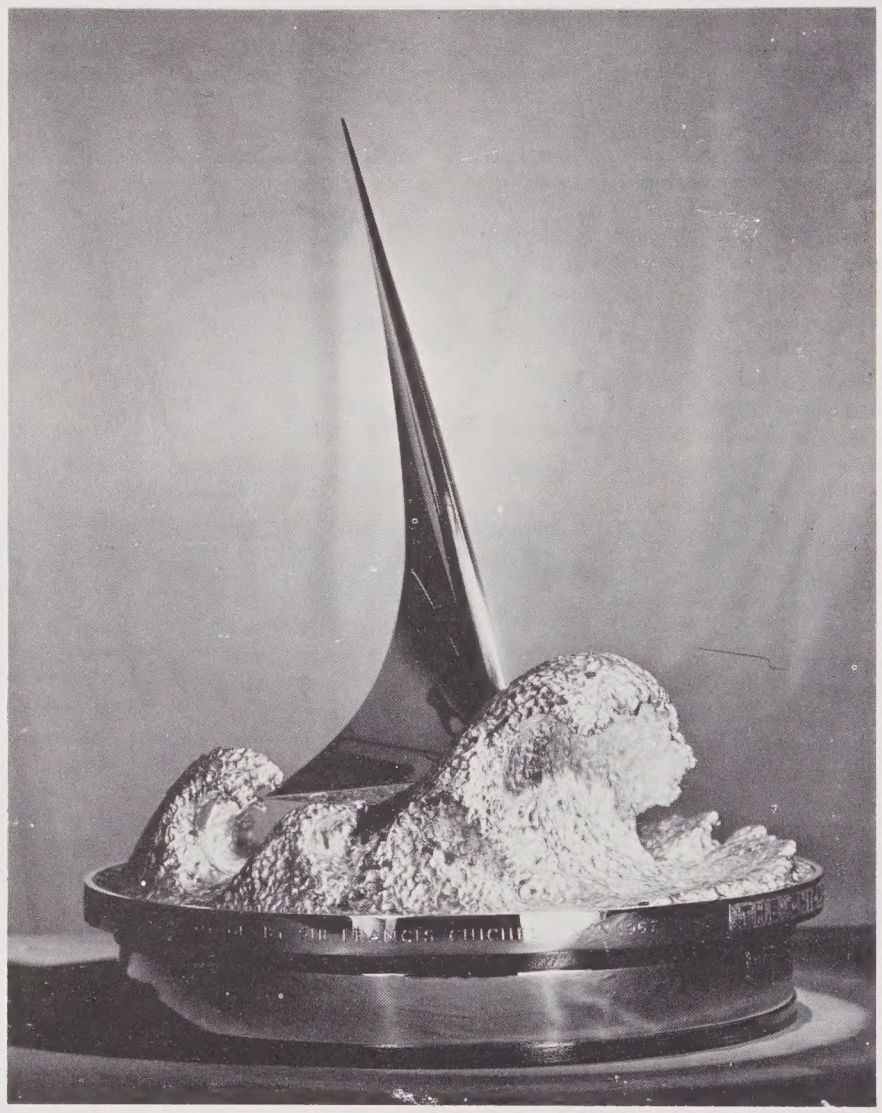
STUART DEVLIN'S CAREER:

1931—Born at Geelong, Victoria, Australia.
1945-1947—Art training at the Gordon Institute of Technology, Australia.
1948-1949—Silversmith designer-craftsman at T. Gaunt & Co., Melbourne.
1950-1958—Art teacher with the Victorian Education Dept.
1958-1960—Study at the Royal College of Art, London.
1960-1962—Study at Columbia University, New York.
1962-1963—Lecturer at Prahran Technical School, Melbourne.
1964-1966—Inspector of Art in Technical Schools, Victorian Education Department.
1965—Established Silversmithing, Goldsmithing, and Industrial Design business in London.

Stuart Devlin, set of nesting boxes, given by His Royal Highness The Prince of Wales to Her Majesty The Queen and His Royal Highness The Prince Philip, Duke of Edinburgh, on the occasion of their Silver Wedding Anniversary.

AUTOBIOGRAPHY

by Stuart Devlin



Stuart Devlin, Chicester Trophy, commissioned by The Duke of Westminster and given to the Royal Yacht Squadron.

I would like to have the time to find out what other people think I do. Perhaps they think I spend the major part of my time sitting at a bench making articles in silver and gold; do they envisage me bent over a drawing board producing pretty drawings from which pieces are made or do they already know what really happens?

It may be regrettable, but is none the less true that it seems to have become impossible to achieve my aims without becoming deeply involved with the enormous number of problems posed by modern business.

Fortunately, I have always enjoyed problems because they provide challenges and, therefore, have the potential of bringing excitement when I find a solution. Problems also imply scope for new ideas so there is always the possibility of even greater excitement if one can actually create a solution. The result is that I am not frustrated and upset by the need to become involved with disciplines other than my special interest. On the contrary, I enjoy the challenges, am fascinated by the possibilities, and sometimes excited by the results.

However, I find that the demands of all these interesting activities have an increasing tendency to swamp the whole reason for their existence, which is design. My solution to this very difficult situation is to go away for two to four weeks at a time to a distant and quiet place where I can design with absolute concentration in relaxed surroundings. The telephone doesn't ring, there are no staff difficulties and there are no concessions to be made. I work in the mornings and after a relatively short time of absolutely intense effort my head feels like exploding so I relax and swim for the rest of the day. The next morning I continue my search for new ideas and work painfully hard at the task of turning those abstract ideas into the beginnings of tangible designs.

My method is to make dozens of tiny sketches before I am satisfied that I have achieved a concept suitable for further development. I circle the sketch which comes closest to what I want and then go on to a new problem.

On my return to London, one of my staff makes full-sized working drawings from my selected sketches, making changes under my close supervision until we have solved all the functional, aesthetic and manufacturing problems that can be solved on paper. The drawing is then given to a Master Craftsman to tackle the remaining problems of manufacture. While he is making the piece, I often look over his shoulder to see if there are any changes necessary at that stage to achieve the best solution.

It is impossible to be completely successful because no creative person, whatever his field, has at his disposal sufficient craftsmanship to turn an abstract idea into a tangible work without some loss in the transition. It is this difficulty which prevents me from ever being entirely happy with my efforts. The irony is that even if I could make an accurate translation, I would probably find that the basic idea was far from ideal.

However, in spite of the difficulties, there are few thrills to equal that of creating something new. I remember a young and talented musician looking at a teapot I had made and saying that the most remarkable thing was that 'IT WASN'T THERE BEFORE'. There is an additional thrill when I think that there is a possibility that it may be there for a long time to come.

It is probably that there have never been so many creative people, yet so few creators. Much of the educational theory of recent years, while purporting to reduce inhibition and thereby improving creativity, has in fact imposed the most severe inhibition of all — the absence of craftsmanship. This has produced a couple of generations of frustrated would-be creators. They may have the thoughts but the majority are woefully inadequate when it comes to making those thoughts meaningful to others.

I am very thankful that for three main reasons I have always looked upon craftsmanship as an absolute essential. In the first instance, my parents encouraged me to contribute ideas but insisted that I aim at perfection when putting them into practice. I don't know how many times I heard the expression 'If a job is worth doing, it is worth doing well'.

Secondly, I was fortunate to have been educated under a system where achievement was not only desired, but demanded. I am appalled at the level of achievement demonstrated by the rubbish shown to me by highly recommended 16 and 17 year olds who seek apprenticeships in my workshops. I feel sorry for them and am angry at their teachers who settle for so little.

Thirdly, my workshop training in silversmithing was at a time when young people still accepted that their superiors had a right to tell them in no uncertain terms what was required of them. I was expected to learn quickly and work at the maximum of my ability or be fired. The job I had was what I wanted, so I had to do what I was told. The result was that I really learned how to work hard and what is more, I learned to enjoy hard work because it brought achievement.

It is a lesson which needs to be borne in mind by all who are associated with crafts of any kind in these times of enormous competition for the luxury dollar. The crafts will not survive to any significant extent unless the craftsmen become more and more professional. The surest way to achieve this is to maintain and improve the apprenticeship system and to develop an awareness of the crucial importance of all forms of craftsmanship in all schools and colleges.

By 'craftsmanship' I mean any skill which is necessary to turn ideas into reality. I am confident that the recent period when artists appeared to be successful painters without being able to paint, will prove in time to have been an aberration, if not an apparition. I am encouraged that, at least in some quarters, 'skill' is not the dirty word it used to be.

Stuart Devlin, wine decanter, sterling silver, gold plated, 20" high.

The continual raising of the school leaving age is having a serious effect on the ability of employers to develop truly professional craftsmen. There has yet to appear to be any advantage arising from imposing a long period of formal education, but there are many disadvantages. Among the most serious of these are decreasing discipline and increasing inflexibility of attitude. The older one starts professional training, the less likely one is to become professional where a very high degree of manual skill is required.

I rarely look back. When I do, I find great difficulty in appreciating the artistic merit of any work of the past except where it accidentally happens to fit in with what I see as the idiom of our time. Today when craftsmanship is at such a low ebb, it is not difficult to appreciate some of the staggering feats of the past, but I feel that it is purely coincidental if something of the past happens to fit fairly closely the aesthetic of our time. If one could cast aside the mystique of age and rarity, it would become more apparent that the general appreciation of art of the past has changed along with the change in the contemporary idiom. When the current aesthetic trend is towards simplicity, the more austere artistic periods of the past were considered to be 'Golden Ages of Art'. In times when richness is a virtue, the more flamboyant periods of the past are in vogue. In romantic times, prettiness has a central role while in more severe times, it is virtually taboo.

Although I have just used the word 'art' in a very general sense, I usually draw a sharp distinction between art and design. For any work to become fine art it has to have the potential to evoke responses in the viewer which transcend the function of the work and its formal aesthetic interest. It is not sufficient that a work has aesthetic appeal for it to be a work of art and it is certainly not sufficient that it merely exhibits a very high level of craftsmanship. It has to possess qualities which give rise to personal reactions of a subjective nature. In most cases where there is some stated function involved, the work is a design; that is, it is fit for its purpose and it is aesthetically pleasing. It may be exciting in its innovation and its creativity, but there are precious few examples where it achieves the realm of fine art.

It is virtually a misnomer to speak of a 'commissioned work of art'. I cannot think of an example in this century of a work of fine art having been produced as the direct result of a specific commission. At best, the end product is an excellent design. The work rarely transcends its function and the constraints of its environment.

I think that most designers in aesthetic fields aspire to produce works of art, but we rarely succeed. As a sculptor, I was solely absorbed in the quest to endow my work with qualities which would evoke powerful responses in those who could see what I was doing. As a designer, my first priorities are usually to create a new piece which fits its purpose and to make it aesthetically exciting. Occasionally, I feel that a piece is more than a design and I hope that it has ascended to the realms of fine art; it is difficult for me to be sufficiently objective to be sure.

About half the designs I create in a year are commissions for a specific purpose. This work is very important to me and often gives the opportunity to create pieces which I would not normally tackle. For example, we have recently completed a 34-light candelabrum, 9 feet long. It is unlikely that I would have made a piece that size if it had not been commissioned. The quite different problems of designing trophies only arise through commissions and the same applies to all the work I do for ecclesiastical purposes.

However, the most important creative concepts develop in the ideas I create when I design peices for their own sake; free of all limitations imposed by commissions. I consider this 'speculative' designing to be fundamental if I am to continue to produce new ideas.

There are considerable financial risks in working this way because of the money which has to be invested in the designs. However, probably the greatest risk is to one's creative integrity. If I had failed in the early days of my career to sell the work I had made speculatively, the temptation to prostitute my ideas to make them saleable would have been very great indeed, and who knows — I may have succumbed.

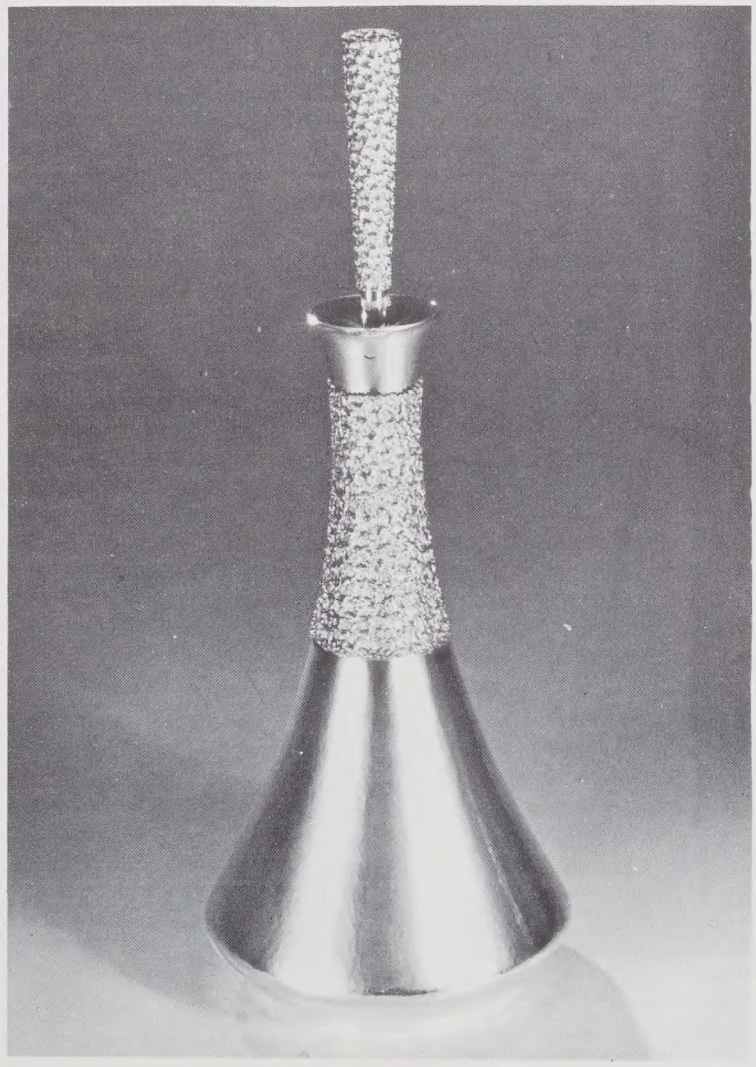
My primary interest is not to be a designer of gold and silver objects per se, but to generally enrich the way people live and work. This has led me into the fields of furniture and interior design, because for several decades now work in these areas has seemed to me to have had more of a sterlising effect on our lives than providing any kind of enrichment. This has meant learning the possibilities and limitations of another discipline. In addition, I have had to develop new techniques to produce the kind of richness I am seeking.

This is a direct parallel with the early developments of my work in silver and gold, where it can be argued that new technical skills came first and the aesthetic part followed. It is rare that we can employ decorative skills from the past because there are such major differences in the economics of today's manufacturing, that the finished product would be prohibitively expensive if we had to use such time-consuming techniques. It, therefore, becomes imperative to be just as creative in how the work is made as in what is made.

The prima donna designer who is only interested in working on the problems of the appearance of his work will have many headaches until he applies his creative thinking on a much wider scale.

My almost total dedication to the search for new ideas for the future virtually precludes me from being interested in the past. I call myself an anti-historian. This doesn't mean that I am anti-historians, but that I am their opposite and aspire to provide some future members of their profession with at least a small mirror of our time.

I do not seek to break with tradition, I strive to add to it. I am not a revolutionary with the implication of an uprising from the ashes of the wilful destruction of the long established traditions of the past. I may be more accurately described as somewhat of a rebel, but only to the extent that the rebellion provides me with a spring board to go on to new and hopefully better ideas.



Jane Ferree
Kent State University, MFA

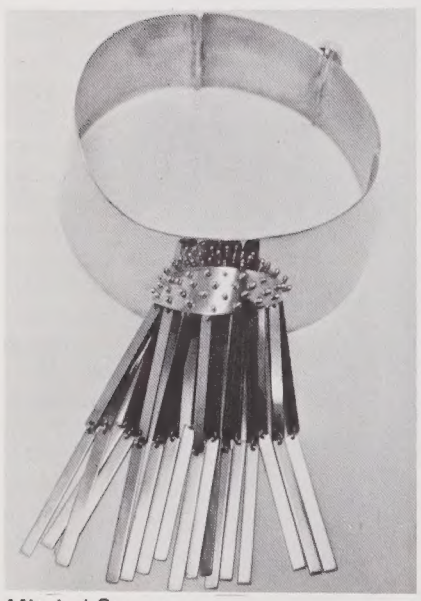
KENT STATE UNIVERSITY

EXHIBITION OPPORTUNITIES

Rhinebeck, N.Y., June 20-25, 13th Annual Rhinebeck Craft Fair, elegibility restricted to persons living in the Northeast Region. Must submit 5 color slides plus $5.00 screening fee. Applications may be obtained from American Craft Enterprises, Inc., P.O. Box 10, New Paltz, N.Y., 12561. Deadline-Feb. 1, 1978.

The "National Metalsmiths Invitational" at the Creative Arts Workshop, Inc., 80 Audubon St., New Haven, Conn., 06511, March 5 thru April 15, 1978.

Holly Billik
Kent State University, BFA
"Elements in series No. 3"



Mitchel Sprunger
Kent State University, BFA
"Collar"

Deadline date: Feb. 1, 1978. March, 1978. Arrango International Design Competition, Miami, FL. Subject: durable eating implements. Write: Arango International Design Competition, 8790 S.W. 131 St., Miami, FL, 33176.

Deadline date: Jan. 16, 1978. April 6 thru 29, 1978. 37th Annual Cedar City National Art Exhibition, Cedar City, UT. For information, write: Thomas A . Leek, Chairman, The Cedar City Art Committee, c/o Braithwaite Fine Arts Gallery, Southern Utah State College, Cedar City, UT, 84720.

May 1978, 2nd Annual National Enamelists Guild. For entry form, write: Gwen Anderson, Chairman, 6520 Ivy Hill Dr., McLean, VA. 22101.

Deadline date: Feb. 1, 1978. May 20-21, Eighth Annual Worcester Craft Fair, Craft Center, Worcester, Mass. For more information and application, write to: The Worcester Craft Fair, Registrars, Worcester Craft Center, 25 Sagamore Rd., Worcester, MA, 01605.

Deadline date: Sept. 9, 1978. Oct. 28 thru Nov. 26, 1978, Marietta College Crafts National '78, 7th annual crafts and sculpture exhibition at the Grover M. Hermann Fine Arts Center. Write: MCCN '78, Arthur Howard Winer, Director, Marietta College, Marietta, OH, 45750.

Sandra Pesec
Kent State University, BFA
"Dragon Weathervane"

Deadline date: slides must be received by Jan. 29, 1978, May 6-7, 1978. "Midwest Craft Festival", Northbrook Court, Northbrook, IL, 5 slides, 4 of which are to be of single pieces (or sets) against a plain background; the fifth may be a detail, must be 21 years of age and living in IL, IND, IÓ, KEN, MI, MO, WI or N.S.A.L. members to enter, fee $5. Write: North Shore Art League, 620 Lincoln, Winnetka, IL 60093.

Deadline date: March 15, 1978. July 29-30, 1978, The 9th Annual Peters Valley Craft Fair. Application fee is $7, open to all crafts, applications: write—Craft Fair, Peters Valley Craftsmen, Layton, NJ 0785.

Deadline date May 1, 1978—1978 Sterling Silver Design Competition. Entries should be packed with care and shipped pre-paid to Sterling Silversmiths Guild of America, 1111 E. Putnam Ave., Riverside, Conn., 06878.

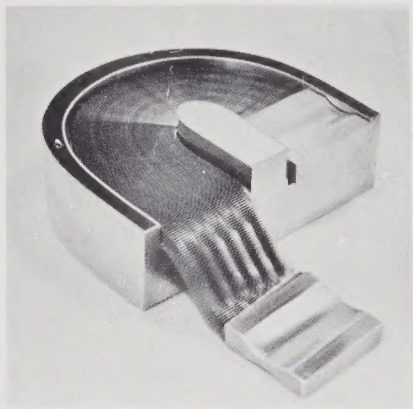
Deadline date: Feb. 4, 1978. April 8 thru May 22, 1978. The Marietta National '78 (formerly Mainstreams), Eleventh Annual Marietta College National Competitive Exhibition of Painting and Sculpture, Grover M. Hermann Fine Arts Center. For prospectus, write: The Marietta National, Arthur Howard Winer, Director, Marietta College, Marietta, OH, 45750.

Deadline date: July 15, 1978. Sept. 22 thru 24, Indian Summer Arts & Crafts Festival '78, 19th Annual festival at the Washington Co. Fairgrounds, Marietta, OH. For information, ISF '78, Arthur Howard Winer, Director, Marietta, OH. 45750.

Deadline date: Feb. 17, 1978, April 16-28, Saenger National Jewelry & Small Sculpture Exhibit, Hattiesburg, MI. Write: University of Southern Mississippi, South Station, Box 5345, Hattiesburg, MI. 39401.

Jane Wiemer
Kent State University, MFA
"Neckpiece"

Becky Brannon
Kent State University, BFA
"Spring Toy"



WE ARE HERE BY DESIGN
by George Nelson
(reprinted courtesy of Wraparound, Harper's Magazine)

St. Louis, Mo., Jan. 1-Feb. 1, 1978. "Enamels and Weavings", at Craft Alliance Gallery. Enamel wall pieces, jewelry and other forms by Linda Lundell of California.

St. Louis, Mo., March 5-29, 1978. "Metals in Motion", Craft Alliance Gallery. Sculptural forms and jewelry by John Baltrushunas .

Las Cruces, N.M., Nov. 27-Dec. 16, A Mano '77 Exhibition, sponsored by Las Cruces Designer-Craftsmen at University Gallery, N.M. State U.

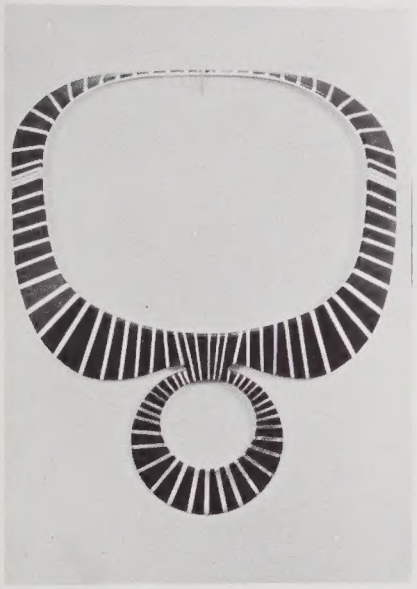
Philadelphia, Pa., Dec. 1-31, "Jewelry by Pahaka", at the "Works" 319 South St.

New York, N.Y.—"In Celebration of the Season", Nov. 29-Dec. 31, 1977. The Elements, The Gallery for Contemporary Crafts.

Gothenburg, Sweden—Society of Contemporary Silver, Dec. 10-Jan. Rohsska Konstslojdmuseet.

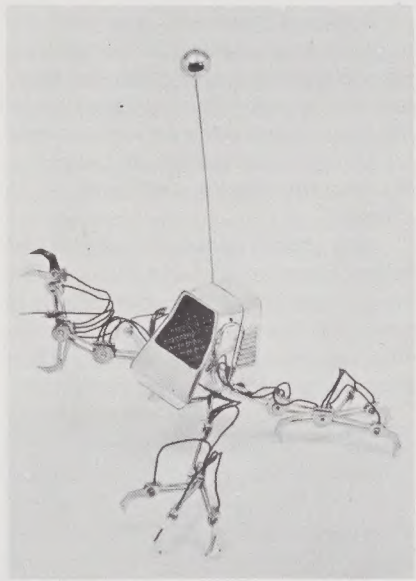
Los Angeles, Calif.—Southern California Designer Crafts, Dec. 31-Jan 31, 1978. Brand Library Art Galleries.

Richmond, Va.—"1977 Virginia Craftsmen", Dec. 6-Jan 15, 1978. Virginia Museum.



Sydney Scherr
Kent State University, MFA

Rick Shiley
Kent State University, BFA



Washington, D.C.—"William Harper Enamel Art", Nov. 24-March 26, 1978. Renwick Gallery.

Tenafly, N.J.—"Precious Metals", Nov. 19-Dec. 31. The Yellow Door. Jewelry by Marian Jordan, Mark Knipe, Pahaka, Kit Schweitzer and Yoshiko Yamamuto.

New Haven, Conn.—National Metalsmiths Invitational, March 5-April 15, 1978. Creative Arts Workshop, Inc.

Rochester, N.Y.—"The First Jewelry & Precious Object Makers Exhibition", Nov. 14-Dec. 31. Gallery of Contemporary Metalsmithing.

St. Louis, Mo.—"Metal & Clay", May 7-31, 1978. Craft Alliance Gallery. Includes work by Eleanor Moty.

St. Louis, Mo.—"Media Mix", July 3-Aug 2, 1978. Craft Alliance Gallery.

St. Louis, Mo.—"Around The Table", Aug. 6-30, 1978. Craft Alliance Gallery.

St. Louis, Mo.—"15th Annual Multi-Media Holiday Exhibition", Dec. 3-Jan. 3, 1978. Craft Alliance Gallery.

For a number of reasons — good and bad — design is a confusing subject. Among the good reasons is the elusiveness of definition: a person who does a line of dresses for a couturier house and someone who draws a plan for a jet engine are both called designers. It is hard to see what they have in common.

What both people share, I think, is the process: each starts with a problem, one related to the female figure and the other related to propulsion. Each arrives at solutions within a context: money limitations, materials available, skills and tools at hand, existing state of the art, competition, the nature of the market. In the end, each has designed an item that must work: the dress has to enhance the wearer; the engine has to drive the plane.

A design may be very beautiful, but it is not art; a design has to DO something. The artist works to make a kind of visual statement that has, for him, some important connection with reality as he perceives it. The designer needs a client to present a problem, and a factory to make his design in quantity.

The scientist believes that problems can be solved with his intellectual equipment plus instruments. His answers are always quantifiable. The designer goes along with this to a great extent, but he also relies on the evidence of his senses and his intuition. So his work falls somewhere between art and science.

A very bad reason for the confusion about design is the prevailing notion that it is a kind of frosting, an aesthetic overlay that makes humdrum objects more appetizing. No responsible designer believes this. In nature, organic designs (our best models) never show decoration that isn't functional, never show the slightest concern for aesthetics, and always try to match the organism with its environment so that it will survive.

Misconceptions about design also arise because modern technology isolates so many people from the process of designing and making. Considering how little we are taught about such things, autos and stereo sets might just as well grow on trees. Technological society has created the visual illiterate, a new barbarian who thinks people have eyes so that they can tell when traffic lights turn red or green, and who lacks the faintest idea of how his complex environment is put together.

One way to learn something about designs is to dust off your old college text for Biology I and read about the way the forms, structures, and colors of organisms relate to what they do. Another is to look around and ask questions:

† Why do perfectly good metal station wagons have panels of fake wood?

† If you went through the house looking for honest designs, would you find more in the kitchen or living room?

† Why are so many big TV sets encased in phony antique credenzas? If you have one, why did you buy it?

† How do you feel about "Louis XV" chairs of injection-molded plastic, or supersonic steam irons?

† If you were offered the choice of a free trip to London, Paris, Zurich, Venice, and Rome, or a tour of the twelve largest shopping centers in the U.S., which would you choose? Why?

Designs have a curious quality, one that practically nobody knows anything about. They can be "read", just like a magazine, and they never lie. When the Victorian *nouveau riche* built a suburban mansion that looked like a castle on the Rhine, the neighbors knew he was not a German feudal lord but just a guy scrambling up the social ladder. It is worthwhile to learn to decode the messages in objects — they are full of information about the state of the society.

If you start reading the objects in your environment, whether buildings or strip developments or manhole covers or consumer items, and the result makes you feel slightly ill, don't worry. It just means that you are well on the way to visual literacy.

AUTOBIOGRAPHY

by Leslie Leupp

ARTIST'S NOTE TO EDITOR: Here is the "Sketch" for the Journal. There were pages and pages written. It was rather devastating at times but very rewarding in the end. I've tried to give you an idea of who and what I am about which is ultimately who and what my work is about. Thanks—Les

I was born a twin, one of 8 children in a small rural community in north-western Ohio near the town of Archbold (home of the La-Choy Chinese food factory.) I spent the next 17 years living on a farm and have many fond memories of those years. Chasing butterflies for my collection, quilting parties and trapping muskrat in the winter are among the fondest.

And the food! The kitchen was the center of activity with the meals, the Saturday morning baking, and a canning season which seemed to last all year round. There was a strong emphasis on the "real thing" characterized by honesty, integrity and a full quality of life.

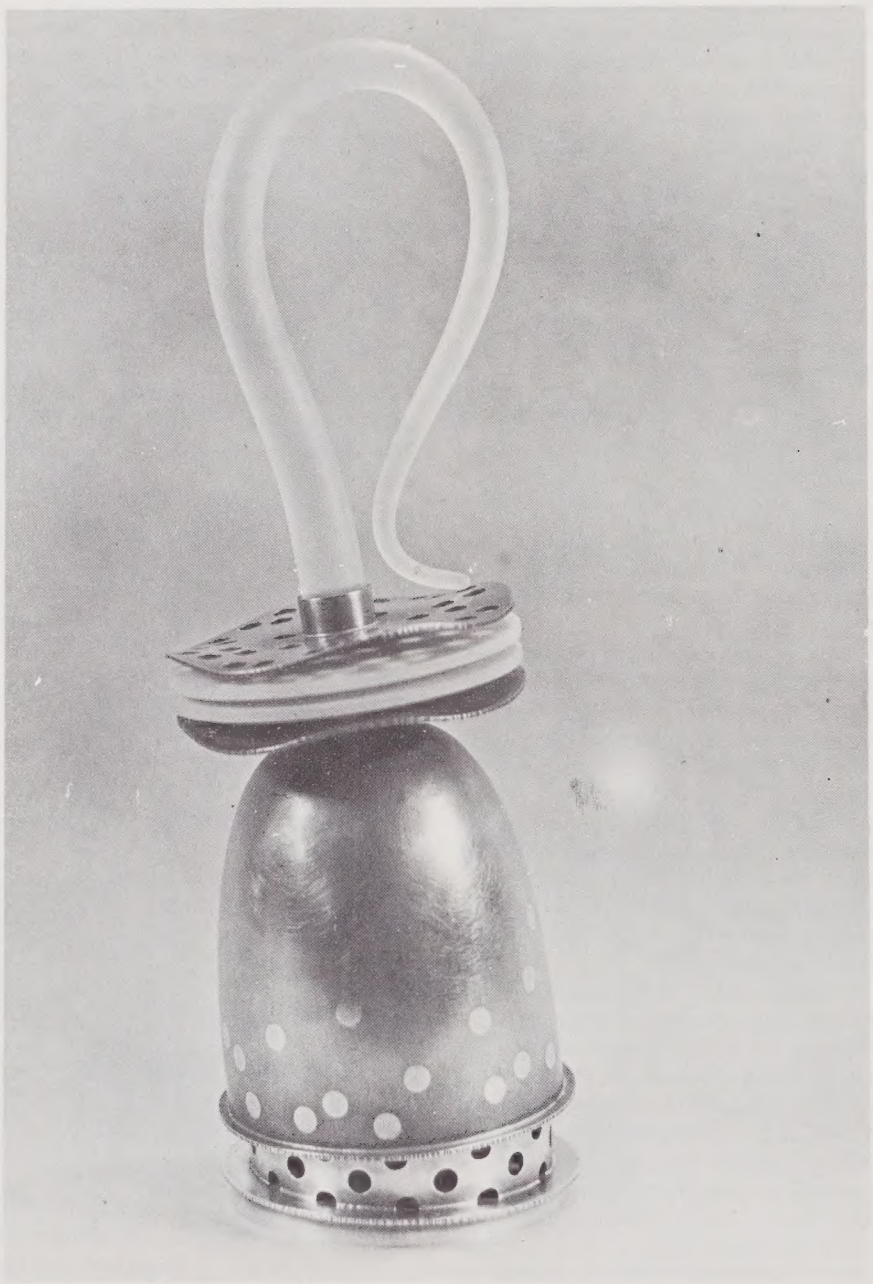
The farm was a treasure land for items one could use for his creations. My first piece of jewelry consisted of a prong from a discarded set of beaters bent into a circle with a rhinestone glued to the top.

Although there was always plenty of work to be done, there was also time for daydreaming of buried treasure and the worlds of culture beyond the farm. There wasn't much room for art, ballet or theatre, although I did have the usual run of music classes.

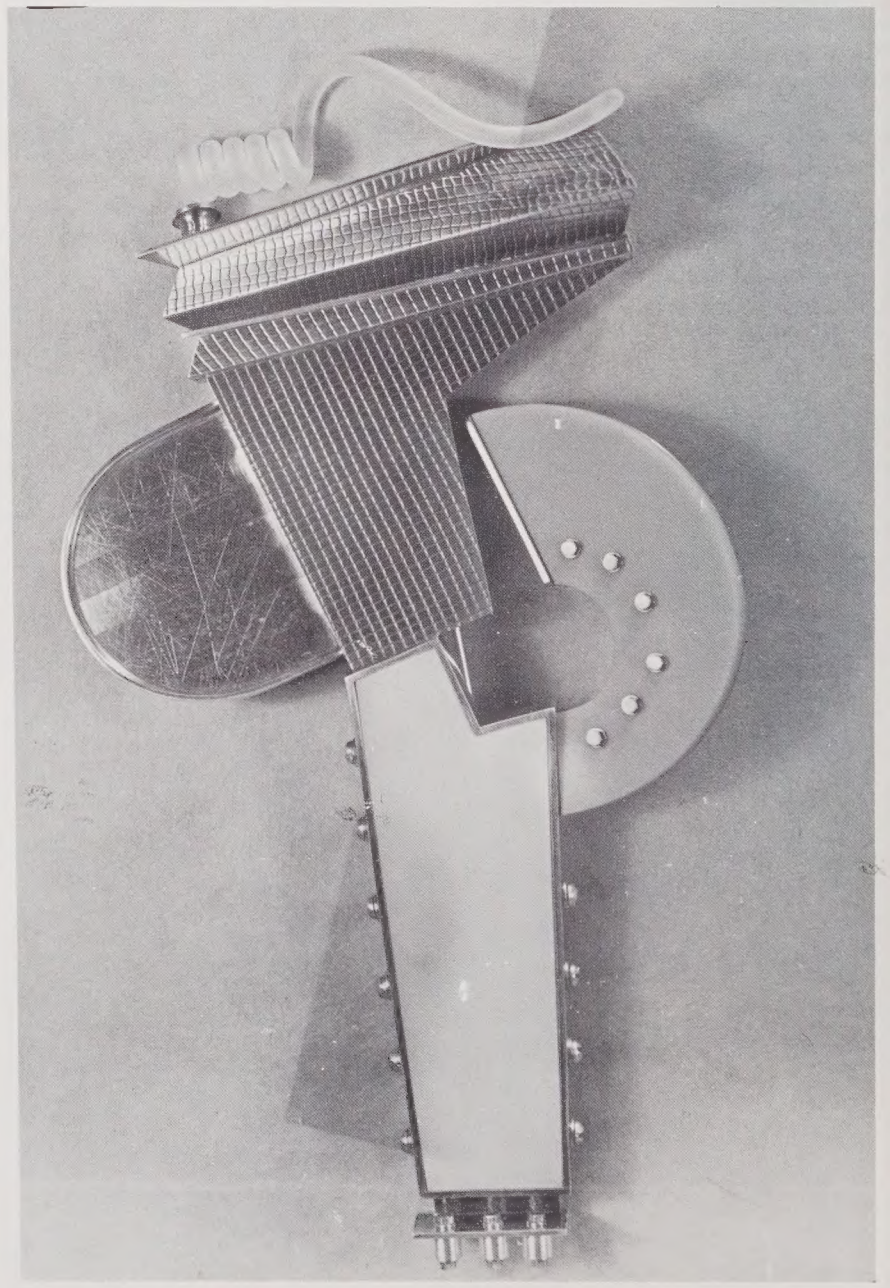
High school wasn't one of the highlights of my youth. I did the usual Jr. Prom decoration committee chairman, choir, and band thing. Small community high schools never seem to offer those things of interest to the "artistically inclined." Being a football jock or a member of the National Honor Society were by far the things for which to strive.

Upon graduation from high school I fell into the category known as the "not quite smart enough for college" group. I spent the next year working in a toy factory, which in itself was an education no college could offer. I enjoyed seeing parts of things coming together and to make a whole and all the bending, shaping and construction going on.

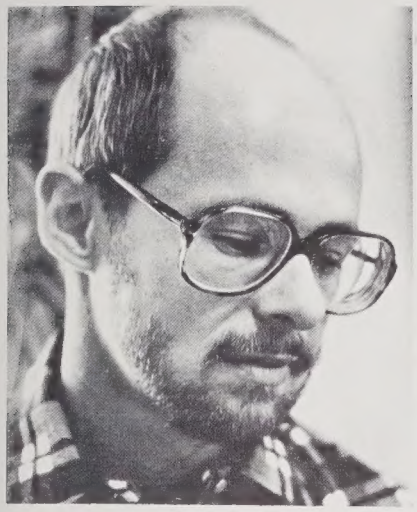
The next four years were spent on the plains of Kansas attending two



Leslie Leupp, "Hand Mirror VI", copper, silver, plastic, 30x9cm.



Leslie Leupp, brooch, copper, silver, brass, plastic, 7½x4½".



LESLIE LEUPP

Leslie Leupp, "Tea for Two", silver, rosewood.

small liberal arts colleges. I majored in art with my strongest emphasis on ceramics and three-dimensional areas. The classes were very small with a lot of personal attention and a healthy sense of competition.

Those four years of undergraduate work plus the years up to and through graduate school were filled with a lot of development and maturation. Values and standards were changed almost daily. A lot of questioning was done. Old friends were given up and communication with parents seemed more difficult than ever.

After undergraduate school there were various options available, but Uncle Sam had other ideas. This was during the late sixties and it was difficult to avoid the draft. I spent the next two years in Chicago doing conscientious objector work at a hospital in Evanston.

The city provided a whole new environment to deal with. I'll always be part farm boy, but the sights and sounds of the city were keenly appreciated.

It was during this time that I received my introduction to metal. I saw a sign posted for Jewelry Classes and figured "why not." The classes lasted five to six weeks and consisted mainly of casting.

My time in Chicago was coming to an end and decisions had to be made for the future. I figured I would be continuing my education eventually and now was as good a time as ever. My jewelry teacher suggested I apply to Indiana University for their Metal Design and Jewelry program.

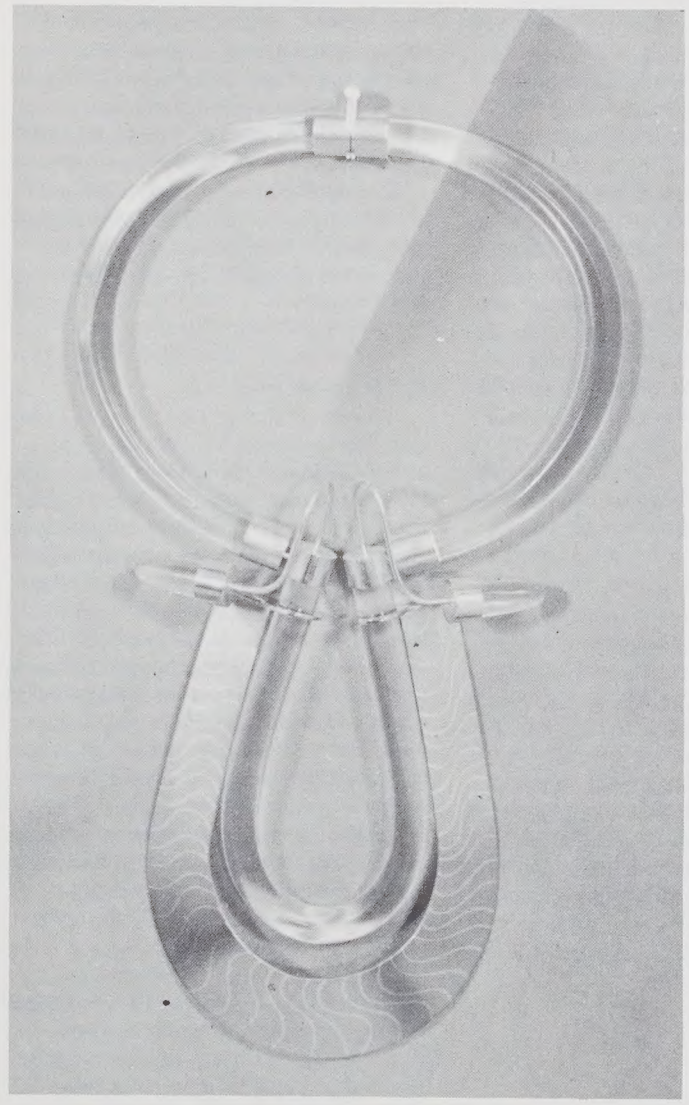
My graduate school experience was a very significant time period when many things fell into perspective. Again there was a new environment to adjust to, new rules, values and standards to evaluate, and plenty of ups and downs. Because of my limited experience with metal up to this point, my work was generally the result of an introduction to new or different technical processes. Graduate school helped bring together a philosophy and aesthetic point of view which is always in the process of change, hopefully open-ended and expanding.

After graduate school, I headed out into the "cold cruel world." I've been teaching for five years at Ball State University in Muncie, Ind. Most of my romantic and idealistic views of teaching and being a "professor" have vanished. Suddenly there were a hundred things to deal with that you're never told about in graduate school.

My work since graduate school is an ever changing process. Each piece is a new challenge although it somehow relates to the piece before it. I'm interested in the craftsman being an artist who takes a period of time to arrive and uses metal to make a statement. I'm interested in the future for what will be realized and with the present for how it will get me there.

I could write a few paragraphs about the disappointments of teaching, red tape, the seeming loss of quality in the American way of life, and general frustrations with the world's problems. I'd rather mention the pleasure I receive when dealing with a student who has a need for metal in his life, the anxiety and excitement which exists while the student works and waits for the results of the Silver Competition, and the feeling of pride when a past student is accepted into graduate school.

For myself, after all the long hours in the studio squeezed between the teaching load and the time one needs to maintain a personal life, there is a time period when all the elements come together. That moment may be very short, but the ego soars and it all seems worthwhile. Then the piece becomes part of the past. New realities and emotions must be dealt with. With humility I reach for the saw frame and start again to work out my salvation.



Leslie Leupp, pendant, copper, silver, plastic.

PROJECT REPORT NO. 3c/3

ADHESIVE BONDING FOR JEWELLERY AND SILVERWARE— A LITERATURE SURVEY

by Janet Batt
(reprinted by permission of The Worshipful Company of Goldsmiths in London, courtesy of Peter Gainsbury)

This survey was carried out at the City University Centre for Information Sciences, London, under the supervision of Mrs. J.S. Rennie. The Worshipful Company of Goldsmiths is indebted to the City University for permission to publish this work.

ABSTRACT

Adhesives are used as a metal-to-metal bonding technique in several industries. Advantages of adhesive bonding over traditional methods of joining metals include the uniform distribution of stresses in an adhesive bond; the possibility of producing joints at low temperatures; and the greater aesthetic appeal of an adhesive bonded joint. In the report, the characteristics of epoxy, cyanoacrylate and anaerobic adhesives are discussed, and methods for modifying the properties of the adhesives are surveyed. An important part of the bonding process is the preparation of the adhered surface. Methods of surface preparation are discussed and a table of those methods recommended for the treatment of precious metals and jewels is provided. Methods of non-destructive testing of adhesive bonds are indicated. It is desirable that joints be designed specifically for adhesive bonding and several recommendations for the optimum design of a joint are reviewed. The report contains a list of those adhesives which can be used to bond precious metals and precious stones.

Introduction: The idea of using adhesives as a bonding technique to replace traditional methods of metal-to-metal joining has found increasing acceptance during recent years in industries such as the aircraft, electrical and electronic industries. The advantages of adhesive bonding include the uniform distribution of stresses within a joint, due to the continuous nature of the joint (34,35,39); savings in cost and weight of the finished article which can be obtained (34,35,36,39); the possibility of joining dissimilar materials which cannot be fixed by other methods (34); the ability to make joints with no heating or low temperature heating (3); and the smooth external surface which is produced and reduces the amount of finishing work required, as well as having greater aesthetic appeal. Adhesive bonding is also considered to have greater reliability in some cases (60) since failure of bonds achieved by e.g. soldering, has been traced to poor soldering or corrosion from solder flux. However, there are disadvantages in both the bonding process and the performance of adhesive bonds. The bonding process requires surface preparation, and long curing times may be necessary, depending on the adhesive chosen.

Bonded joints tend to have poor peel strength and it is therefore advisable that a joint be designed to minimize peel stresses (10,36,39). Most authors emphasize the desirability of designing a joint specifically for adhesive bonding, rather than designing a joint and afterwards deciding that it is to be bonded by adhesives.

Since, as yet, very little has been written about bonding precious metals, this report is based on the use of adhesives for bonding non-ferrous metals.

TYPE OF ADHESIVE:

Coover (14) and DeLollis (15) mention the three ways by which an adhesive bond can be formed. These are: (1) The adhesive is applied as a liquid hot melt which solidifies on cooling to give a tough, rigid layer between the bonded surfaces; (2) The adhesive is applied as a solution which solidifies by evaporation of the solvent, or absorption of the solvent by the adherend; (3) The adhesive is a substance, capable of polymerisation, which is applied in a state of low polymerisation and cured, with or without heat or pressure, to form a firm bond.

Most adhesives which are used to bond metals to each other form bonds by the second and third methods described above.

EPOXY ADHESIVES:

Adhesives based on epoxy resins appear to be those most widely in use for metal-to-metal bonding at present. There is a large variety of epoxy resin adhesives but they all consist of molecules with two or more epoxy groups (36). Curing takes place either by direct epoxy-epoxy reaction involving a catalyst such as tertiary amine, or by reaction of the epoxy with a coreactive hardener, e.g. primary and secondary amines, capable of linking two or more epoxy groups (51). Thus epoxy adhesives cure with very little shrinkage since the curing process is an additional reaction and there are no by-products or evolution of volatile consituents or water during curing (8,10,48,52). Epoxies are capable of joining both porous and completely non-porous surfaces, and of achieving complete cure in small gaps (13,23). Because of the low shrinkage, surface contacts set up between the adhesive and adherends are unaffected by cure and strong bonds can be formed without the use of high pressure (52). Cure times vary considerably, and range from less than one minute (61) at room temperature to one day at room temperature (65). Most of the two part epoxy adhesives cure at room temperature although the rate of curing can usually be increased by raising the temperature (51), but single component epoxy adhesives may require heating, e.g. to 110 d. C (62) in order to cure. Most epoxy adhesives are less sensitive to bond-line thinkness variations than other adhesives (8,52).

Unmodified, cured epoxy resins tend to form brittle bonds with very low impact resistance (48,51) but flexibility can be achieved using flexible coreactive materials such as polysuphides (51). The flexibility of some commercially available epoxies (54) can be adjusted by altering the ratio of hardener. The bonds formed by the epoxy adhesives provide high shear strength (24,26,66,77) and Wooten (52) states, that in general, the more flexible epoxies have the higher shear strengths. Peel strengths, however, tend to be weak (24,26,48,51) although the manufacturers of 'uniset' (55), 'Uralane 8615' (58) and 'EA9411' (67) claim that these adhesives possess high peel strengths. The temperature resistance of cured epoxy adhesives varies a great deal with different formualtions. Golding (23) says that cold-set epoxies undergo a second-order transition from a glass-like to a rubbery state at 50-60 d. C, and adhesion suffers at this temperature. The transition can be increased to 60-70 d.C by hot post-cure. Hot-setting adhesives undergo transition at 100 d. C and this can be increased by careful selection of the hardner. Barie and Franke (5) indicate the role of different hardeners in temperature resistance of epoxy adhesives. Those adhesives incorporating aliphatic polymine hardening agents are not serviceable above 65 C, whereas aromatic diamine and mono-anhydride cured adhesives are capable of withstanding temperatures up to 150 C. Adhesives used for the Appollo spacecraft (68) withstood temperatures up to 150 C without excessive loss of bonding strength. A one-part adhesive used to bond electronic components is useable at temperatures to 400 C (76). Twiss (48) says that the one-component adhesives have improved heat resistance but require an elevated temperature cure. Rayner (35) and Twiss show that the adhesives which have high temperature strength are usually more brittle. Chastain and Cagle (8) state that cured epoxy adhesives are practically insensitive to moisture, although by penetrating the bond, moisture may cause interfacial problems by diminishing the free energy of the system and thus making the bond unstable (28). It is claimed (13) that 'Araldite' stands up to repeated immersion in boiling water. An epoxy adhesive(53) developed primarily for use in a high moisture environment forms permanent waterproof bonds which withstand high temperatures.

The main disadvantages of epoxy adhesives are colour (24) and the messiness of mixing two-component adhesives. Colours of epoxy adhesives vary from clear amber to black (54) and dark brown (64). However, epoxy systems are available (56) which are clear and can be coloured to suit the application. The mixing problem is solved where products are available in accurately pre-dispensed packages (64) which are easy to mix. Hartley (25) mentions that there could be a problem of shortage of epoxy adhesives since many originate from petrochemicals.

CYANOACRYLATE ADHESIVES: Cyanoacrylate adhesives are one-component adhesives. The general formula of the monomer is H_2C= C (over CN) - COOP, where the alkyl group (R) is usually a methyl (CH_3) or ethyl (C_2H_5) group (29,47). The different alkyl groups provide different bond strengths – Plouchak (32) says that the ethyl cyanoacrylates form stronger bonds. The polymerisation of the adhesive is initiated by the trace quantities of weak bases such as moisture (41,47,72) which are found on all surfaces. DeLollis (17) says that an alkaline surface accelerates the cure whereas an acidic surface may increase the curing time. The adhesive does not cure in the presence of air (17,73). Since curing depends on surface catalysis, the thickness of the bond line is fairly critical. Thinner bond lines give stronger bonds (26,32,41) and bond thicknesses of less than 0.002" are recommended (17). The absence of solvents leads to low shrinkage of the adhesive (47), although outgassing has been reported (17) and the adhesives can be used for bonding both porous and non-porous surfaces (32,67).

Curing times in general are very rapid (1,17,19,67,71) and setting occurs in seconds, although some plated surfaces tend to be passive (17) and cures on these surfaces are slow. These surfaces can be activated using a coating of a 1% solution of amine e.g. methyldiethanolamine, in acetone. Room temperature cure is possible in most cases and minimum contact pressure is usually all that is required while curing takes place (1,32,41,71). Cyanoacrylate adhesives are formulated to produce high tensile strength at the expense of peel strength (71) and bonds tend to have low to medium shear strengths (1) and can be brittle and inflexible and susceptible to breakage (32,47). The cured bonds tend to have poor thermal resistance (1,47) and are not recommended for use at temperatures higher than 80 C, although some adhesives which will withstand elevated temperatures (200-400C) have been developed (19,74). Another disadvantage of cyanoacrylate adhesives is the low water resistance (17,29,41). When the alkyl group of the cyanoacrylate is a methyl group, the adhesive bonds are readily replaced from most materials by water, but when the alkyl group is an ethyl group the adhesive bond is affected significantly by water only on ferrous metals. Plouchak (32) mentions new formulations of cyanoacrylates which are particularly resistant to moisture when applied to metals. Cyanoacrylates are fairly expensive (19,35,47,71) but can be economical to use (72,73) since only a small amount of the adhesive is required to form a strong bond.

ANAEROBIC ADHESIVES: Anaerobic adhesives are single component, solventless liquids consisting of acrylic acid diesters (30,41). Free radicals which are continuously produced react with oxygen dissolved in the liquid. When the adhesive is confined between two adherends and all the dissolved oxygen has been used, the free radicals react with the monomer diesters and produce a hard polymer. Curing relies to a certain extent on the catalytic action of the bonded surfaces (20). The hardening process is accelerated when the adherends are two metals (6). There is virtually no shrinkage during cure. Anaerobic adhesives cure fairly slowly (41,67) although cure times can be reduced to a few minutes using chemical accelerators (20,57,67, 69). Room temperature cure is possible but slow in general and may require pressure. The rate of cure is increased at elevated temperatures e.g. 120 deg. C (41). Since the curing process involves a degree of surface catalysis, the width of the bond line is important. A bond line thickness of 0.001-003" is recommended (20,30) although some adhesives are available for which the manufacturers suggest that a bond line of 0.005" should not be exceeded (21). DeLollis (17) and Krieble (30) discuss the inhibiting effects of some surfaces on cure. Plated surfaces tend to be non-catalytic and prevent the adhesive from reaching the base metal, so some plated surfaces require priming. Also surfaces such as gold and silver are inactive to anaerobic adhesives and tend to promote curing at a much slower rate than other metal surfaces. Shields (41) says that gold requires priming with an organometallic activator in a solvent, or a chromate rinse before application of the anaerobic adhesive. Rough surfaces are difficult to bond using anaerobic adhesives since trapped air inhibits the curing process. Small joints, also, let air in (30) and thus block curing, although Shields (41) says that anaerobic adhesives are particularly suited to small assembly. Krieble (30) maintains that the cured adhesive produces bonds which have high shear and tensile strengths, and high strenghts are also claimed in reference 63. However, Shields (41) states that peel, tensile and shear strengths are low. The temperature resistance of cured bonds is good; bond strengths can be retained up to 150-200 C (35,75) although some adhesives are suitable for use at lower temperatures, 80-95 C (20, 21). The resistance of the bonds to water varies with the formulation of the adhesive. Prolonged exposure to moisture usually has a bad effect (41) although good moisture resistance is claimed in some cases (21, 63). Bond strengths which are 85% of room temperature strength are reported for specimens which have been immersed in water at 95 C (21). Anaerobic adhesives cure only in the joint, and excess adhesive can therefore be easily removed. The colourless, transparent adhesives produce an invisible bond line (21) so that the appearance is cleaner than that of bonds produced with two-component adhesives. A disadvantage of anaerobic adhesives is the fairly high cost (30,67).

MODIFICATION OF ADHESIVE PROPERTIES: Properties of adhesives can be modified by mixing two different polymers. Rayner (35) mentions that a decrease in the brittleness and an increase in the peel strength of a thermoset adhesive, such as an epoxy, can be obtained by adding a thermoplastic resin. However, this results in a reduction of the hot strength of the adhesive. Swanson and Price (46) and Polniaszek and Schaufelberger (33) investigated the effects of silane adhesion promoters incorporated into adhesives. Swanson and Price found that reactive silanes in urethane adhesives gave higher peel strengths after exposure to humidity than did the unmodified adhesives. Polniaszek and Schaufelberger showed that the hot-strength of an epoxy-based system could be increased by about 60% when an amino or mercapto silane was blended into the system. Polysulphides of the thiokol type were used by Woodhouse et al (51) to modify epoxy adhesives, and these produced a cured system of greater flexibility with improved impact resistance and greater peel strength, without reducing the bond strength. It was found that amino-thiol and dithiol terminated polymers gave the best shear value.

Another method of modifying adhesive properties is combination bonding (2,9). Althof (2) describes the use of two adhesives – a tough, non-heat resistant adhesive at the ends of the joint, and a heat resistant adhesive in the middle of the overlap which together provide a bond which has good temperature resistance and which has a room temperature bond strength much greater than a similar joint formed using a single heat resistant adhesive.

Coover (14) describes the ideal adhesive which should be capable of removing moisture and oil from metallic surfaces, establishing a large surface contact area and producing a firm bond rapidly at room temperature. However, most authors recognise that it is rarely possible to obtain the ideal adhesive for each bonding problem, and that the user must be prepared to obtain some desirable properties at the expense of others.

A number of factors must be taken into account in the selection of an adhesive (40). These include the processing requirements, bond strength required, the surface conditions which exist, cost of the adhesive and colour of the adhesive. Details of adhesives which are thought to be suitable for bonding gold, silver, platinum and precious stones are given in the appendix.

PREPARATION OF ADHEREND SURFACES: Smith (45) states that the preparation of a surface is probably the most important step in the entire bonding process. The purpose of surface pretreatment is to remove surface contaminants which may prevent contact between the adhesive and the surface (43) and which may be weak and susceptible to moisture and would produce a joint which has similar properties (38). In order for a

liquid to spread on a solid surface, the liquid should have a lower surface tension than the critical surface tension of the solid (15). Most organic adhesives have surface free energies less than 100 ergs/cm^2 and surface free energies of metals are in the range of 100-300 ergs/cm^2 (15,18, 37), and DeLollis (15) assumes that lack of adhesion is due to the decreasing of the surface free energy of the solid by surface contaminants.

Methods of surface preparation include abrasion and chemical pretreatment. It is thought (6,12) that lightly abraded surfaces are more receptive to adhesion than highly polished materials, but Cagle (7) and others recommend that, since abrading tends to push foreign particles into the surface of a metallic substance, abrasion should be followed by chemical cleaning to minimize corrosion problems. Abrading is not considered a suitable method for cleaning plated surfaces (16).

Chemical pretreatments alter the surface (7) to increase its free energy, and may lead to the formation of an oxide layer. DeLollis (16) has shown that oxidised polar surfaces are more adsorptive and develop greater adhesion than lower energy noble metals which are non-oxidizing. However, Wegman (50) says that many metal oxides have weak cohesive strengths within themselves and bonds to these fail at realtively low levels of bond strength. He showed that an aluminium surface bonded in the presence of oxygen had a lower shear strength and showed an increase in adhesive failure compared with a clean aluminium surface bonded in the absence of oxygen. He says that good bond strengths are obtained to a metal such as gold which does not form an oxide, and suggests that oxides are not essential to adhesion.

Details of the surface preparations recommended for various adherends are given in TABLE 1.

BOND TESTING: Most methods of testing an adhesive joint involve the destruction of a bond formed under similar conditions. Strenghts of bonds are dependent on factors such as the shape and dimensions of the sample, the conditions of storage and test and so on (31). Therefore it would be desirable to use non-destructive testing methods to detect faults in bonded joints. Such methods include ultrasonic, thermal and infra-red techniques (4,34,44) but they have not as yet been widely accepted as reliable methods of testing bonds.

NOTE: In the following table, items are listed in the following order: Adherend, Treatment, Reference Number.

TABLE 1—SURFACE PREPARATIONS FOR VARIOUS ADHERENDS

Gold; Degrease; 12/ Gold; Degrease; solvent=trichlorothylene; 43/ Gold; Solvent or vapour degrease after light abrasion with fine emery cloth; 43/

Platinum; Trichloroethylene, solvent or vapour degrease after light abrasion with a 320 grit emery cloth; 43/ Platinum; Vapour degrease. Light scrubbing with a mild commercial cleaner, surface rinse, dry quickly; 7/

Silver; Degrease; remove tarnish with a fine emery cloth, degrease; 12/ Silver; Trichloroethylene degrease, abrasion with 320 grit emery cloth followed by solvent degrease; 43/

Silver, Gold Plating; Degrease or solvent clean, scour with a commercial cleaner, rinse with distilled water, dry with clean air at room temperature; 7/

Jewels; Degrease; 7/ Jewels; Degrease using solvents, do not handle with bare hands after cleaning.

DESIGN OF BONDED JOINTS: The undesirability of using adhesives to bond joints which have been designed for fixing by other methods is widely recognised. Components should be designed specifically to suit adhesive bonding (38,70). Golding (23) describes the optimum design for an epoxy adhesive joint. This should be a well-balanced shear joint which does not buckle to produce peel stresses. Sharpe (38) notes that adhesive joints are better when loaded in shear and compression than in peel and the design of a component should allow advantage to be taken of this. Cherry and Harrison (9) suggest methods of designing lap joints in order to get uniform shear stresses in the adhesive layer. A more even distribution of strain along the joint is obtained by tapering the ends of the adherends.

CONCLUSION: As yet, very little research into the application of adhesive bonding in the silverware and jewellery industries has been carried out. It is therefore necessary to test the suitability of individual adhesives in each situation in which it is planned to use adhesive bonding. Some work is being carried out in the Chemistry Department of The City University, and it is hoped that this research and work carried out by the Worshipful Company of Goldsmiths will provide the industries with the necessary information.

APPENDIX

Details of adhesives which can be used to bond various adherends are given below. The adherends are listed at the tops of the columns and the adhesive types are listed vertically. A cross in the column indicates that a particular adhesive is suitable for use with the adherend heading the column.

ADHESIVE	GOLD	PLATINUM	SILVER	PRECIOUS STONES	REF. NO.
Anaerobic				x	6
Anaerobic				x	20
Cyanoacrylate				x	1,32
Epoxy (unspecified)				x	42
Epoxy (unspecified)			x		10
Phenolic epoxy	x				49,27,43
Epoxy (bisphenol A-based) + polymine	x	x	x		27,43,49
Epoxy (bisphenol A-based) + polyamino-amind	x		x		27,49
Epoxy (bisphenol A-based) + polyanhydride	x		x		27,43,49
Epoxy polyamide			x		42
Epoxy with latent dicyan-diamide catalyst			x		42
Epoxy cured with tri-ethylene teramine			x		42
Epoxy with methylene diamide catalyst			x		42
Epoxy polymide			x		42
Epoxy polysulphide		x			43
Epoxy/alkylester	x	x			27,49,43
Epoxy (cycloaliphatic	x	x			27,49,43
Polyester + isocyanate	x				27,49,43
Polyvinyl alkylether	x	x			27,49
Polyhydroxyether	x	x			27,49,43
Polyester + catalyst		x			37,42,43,27 49
Polyacrylic esters	x				43
Vinyl chloride-vinyl acetate	x				43
Vinyl acetate-ethylene	x				43
Polyamide/nylon based			x		43
Melamine formaldehyde		x			43
Neoprene rubber		x			27,49
Polychloroprene rubber		x			43
Polyurethane rubber	x				43
Nitrile rubber	x				43
Polyisobutylene rubber	x				43
RTV silicone	x				22
Silicate with china clay filler		x			42
"Vigor-Aron Alpha"				x	59

Copies of bibliography & references are available upon request. Write Goldsmiths Journal.

ST. LOUIS CONFERENCE TECHNICAL PAPER PRESENTATION

Please remember that the Society is now accepting proposals for the presentation of technical papers at next year's conference. As with last year, the papers will be printed and distributed to those attending the conference as well as appearing in a later issue of the JOURNAL. The Society will again be able to offer a modest reinbursment for expenses incurred to the authors.

Difference from last year is that people need not be members of the Society to make presentations. It is hoped that this broader invitation will help elicit the submission of a wide range of topics.

Proposals need only consist of a title and brief description of the subject, but should be sent immediately to the Boston office.

INVITATIONAL SNAG EUROPEAN EXHIBIT

European Invitational Exhibition 1979: SNAG has been invited to send a collection of contemporary jewelry to be shown in the Schmuckmuseum Pforzheim. Dr. Fritz Falk shall be coordinating the Museum's efforts with SNAG. Dr. Falk would like to present about 180 pieces (only jewelry, no objects) and prefers three pieces from each of about 60 members.
This invitation was accepted by a vote of the membership at the SNAG meeting in Seattle. Further information will be forthcoming, but it now looks as if pieces would need to be available from fall '78 for approximately 1½ years. Method of selection of the 60 participants shall be determined later. It is anticipated that the 60 shall be selected from the ranks of the pro-members.

Being president seems to be keeping me at the typewriter and telephone rather more than I had anticipated it would. And it does not all concern projects which the Society is initiating, but rather — we are ever increasingly being asked to assist various organizations with projects or problems concerning contemporary metalwork (exhibitions, workshops, etc.).

A problem has arisen — again — over the distribution of our membership lists. Some time ago it was discussed and at that time, there was some hesitancy over letting anyone except the main office have a copy. This has since been modified to where any pro member, upon request to our office, may receive a current copy. It is my feeling that most of our membership would not mind it being known that they belong to the organization; the question is, would freer distribution of the list bring unwanted junk mail or visitors. Although we have not sold our list, they could get passed around.

In recent weeks, I have been asked by two parties for a list of our members. An art center and a museum are planning exhibitions of metalwork and they felt it would facilitate arriving at a list of invited craftsmen. I have made the decision, in these two cases, to send our lists. I would appreciate it, however, if any member has reservations about his/her name (and address) being sent out, he please notify the Boston Office stating in which circumstances he does not wish distribution. It is a simple matter to pull a mailing label from the Xeroxed sheets.

I know that personally, I have found the list quite useful on a number of occasions. For example, when I have organized workshops at school, I try to notify everyone within a day's drive and invite them to participate. Many times these are people I do not know and I have met some nice craftsmen and had some good exhanges of information result. It is my understanding that one of the prime objectives of the Society is the sharing of information — of communication between its members. This would be much more easily accomplished if we knew who we all were. I would appreciate hearing your views on this — especially if they differ.

I have been helping two museums in planning for upcoming exhibitions. The Headley Museum in Lexington, KY, is planning an invitational/juried show of jewelry and small objects of precious metals to be held in Sept. '78. A catalog is planned and prizes will be awarded. Their announcements will go out shortly. Also, the Campbell Museum (Campbell Soup Co.) in Camden, NJ, is planning a major exhibition of metal soup tureens (possibility also including ladles, spoons, and bowls). This is to be in late 1979. They plan a catalog, the show will tour and pieces will be purchased for their permanent collection. You may have seen publicity on the show they organized of ceramic tureens. It was such a success, including a surprising number of private purchases, that the museum wishes to have a similar show in metal. This will also be both an invitational and an open, juried competition. Some attention for our holloware people — GOOD NEWS!

Greatings of the season to you all.
Mary Lee Hu
Art Dept., Michigan State University, East Lansing, MI, 48824

JOURNAL INVITES SCHOOLS TO PARTICIPATE

Last year, we asked many metalsmiths/jewelry instructors to encourage their students to mail us photographs and papers for inclusion in the April 1977 issue. This year we would like to repeat our invitation. Beginning with our Feb. 1978 issue, we would like to feature from one to three schools per issue and continue until we have exhausted our material. Instead of us jurying the photographs, we ask instructors and students to make the decision. Please send us 5 to 7 b/w photos, 3"x5" or larger. Specify which 5 you definitely want printed. On the back of each photo, include student's name, name of school, degree sought and graduation date, title of object, media, and measurements. Also, please specify which deadline you prefer: Feb. 78 with Jan. 5 deadline; April 78 with March 5 deadline; June 78 with May 5 deadline; Aug. 78 with July 5 deadline; Oct. 78 with Sept. 5 deadline, or Dec. 78 with Nov. 5 deadline. The JOURNAL is your publication and therefore needs your support.

We welcome the following new SNAG members:

ASSOCIATE MEMBERS: Gilbert Donahue, Arlington, Va.; Dorothy Schoettle, West Memphis, AR; Kenneth L. Cook, Castro Valley, CA; Mid American Crafts Exhibits, Inc., Lawrence, KA; Joyce Gray, Vinton, VA; B.Y. Guida, Lancaster, PA; Bruce Metcalf, Ft. Collins, CO; Dr. Lee Richards, Las Cruces, NM; Deborah J. Harris, Akron, OH; Harold Helwig, Newport, KY; Barbara Johnson Wood, Arlington, VA; Randall Barrow, San Francisco, CA; Bernard Zitin, Philadelphia, PA; Kay White, Mtn. View, CA; Allan Forrmsky, Elizabeth, PA; Adine D. Kaufman, Islip, NY; Charles Topping, Key West, FL; Leuf Miller, Chetenham, PA; Judith A. Frey, New York, NY; Richard Davies, Washington, DC; Gaie Silverblatt, Key West, FL; Irene Siefferman, Harrison, OH; Ed Levin, Cambridge, NY.

STUDENT MEMBERS: Michael Miklos, Richmond, VA; David Welty, Minneapolis MN; Calvin Lee, San Francisco, CA; Douglas Wilson, Madison, WI; Vernon Theiss, Imperial, MO; Harry Hampert, Oakland, CA; Marcia Gilbert, Lakewood, OH; Kaylyne Butcher, Ypsilanti, MI; Jane Carpenter, Hudson, IL; Harriett Martin, New York, NY; Barbara Sloan, Hot Springs, AK; Carole Herman, Alameda, CA; Thomas Lake, Cayahoga Falls, OH; Rose Levine, Santa Monica, CA; Betty Helen Longhi, Stanleytown, VA; Roxanne Reep, Greenville, NC; Fred Schreiber, Scarsdale, NY; Caryn Leuteritz, Philadelphia, PA; Susan Ginn, Arlingtin TX; Beverly Decman, Joilet, IL; Jo Weinberg, Greenwich, CN; Dana Bussell, Denver, CO; Matt Meis, University City, MO; Pamela Myers, Peoria, IL; Nana Israel, Lawrence KA; Rod McCormick, Providence, RI; Sharon Herndon, Jonesboro, AR; Pat Lamb, Tallahassee, FL; Jack Thomas, Oxford, OH; Priscilla Moore, Atlanta, GA; Travis Ogden, Jr., St. Paul, MN; Trudy Berman, El Paso, TX; Susan Smith, Richmond, VA; Sook Hye (Yoon), Woodside, NY.

Hans Christensen, chalice, sterling silver.

BIOGRAPHY AND CONVERSATIONS OF HANS CHRISTENSEN

edited by Mary LaPrade

"It is necessary to get a great number of people interested one way or another in our field of interest."

Hans Christensen, sculpture, sterling silver and rosewood.

Hans Christensen is presently a professor at the Rochester Institute of Technology's School for American Craftsmen. The Danish metalsmith from Copenhagen apprenticed at Georg Jensen Silver and later worked in the model department. In 1954 he came to the United States and became one of the founding members of the Society of North American Goldsmiths. Mr. Christensen has participated in over 100 exhibitions including "Object U.S.A." He also has given many lectures; appeared in numerous publications such as "Craft Horizon", "Art Magazine" and "American Artist"and on television programs; and won many prizes, honors and awards.

"I've always been interested in art. I'm in a very lucky situation. All my life, I've always been associated most of my time with good people. It started very early in my parent's house. There were a great number of orators. Some painters also came . . . mostly because my father was an accountant, and he had these people as clients. So, I think very early I got off to a good start.

"Later in school, I was again very lucky. I went to a fantastic school. The Dean of the school was very much in favor of acting and filmmaking and it influenced the class as a whole. He took upon himself to teach us kids something about life. But, then I came to a day when I had to make a decision. I was in a sense forced to go either north or south. By that I mean that Danish education is divided after a certain number of years. I chose to go into craft education and so I asked my father if he thought it was a good idea if I were to be a sculptor. Of course, he said, 'no, there was no future in it and I had better get some other ideas'. Now at that time I listened to him once in a while, so I followed his advice and figured out a compromise between being an accountant or being a sculptor — I would be a silversmith.

"In 1939 I started both in a school for arts & crafts and also at Georg Jensen as an apprentice. For many, it was difficult for them to understand the number of hours we had to work at that time. Working at Georg Jensen from 7 in the morning until 4 in the afternoon, then I had the time off until 6. I participated in the arts & crafts school from 6 to 10 and this went on for five years. And after five years, of course you can understand that unless I had been completely stupid, something must have rubbed off. Here again I was extremely lucky. The people I got to know as silversmiths and teach-

ers were wonderful people. They were people that believed in craft; they were people very skilled. I cannot tell anybody that luck is something that really exists. I could just as well have met people that were not able to give this information to me.

"The way we were learning at Georg Jensen was extremely good. We were started in a small way — playing with the material, making things that were not even useful and then little by little, we were kind of sliding into production. Maybe we would just sit down and make several spouts and then later we would make several coffeepots or whatever they wanted. These things were things that were in production. There was some supervision during the time we were making them. Sometimes we were helping the journeymen silversmiths who made a living out of it. These people began to show us how to make things. At some time later they would benefit because then we could help them.

"That breed of craftsman which existed at that time unfortunately, they all passed away. They were people that were very proud, and meeting them on the stairways, men would step out and let them pass by — they were the masters. They knew how to handle tools and material and without them nothing could be produced. I can tell some wonderful stories about how they accomplished things. I will have to admit one thing. These people were working by the piece so this is again very difficult to make art under such conditions. They were super-super — they were nothing to kid about.

"This was going as I said for five years and then after this I again took two years more of full time schooling. Still again, I had two more years after that to earn the master's degree so I could open my own shop and employ people. It is now a question I think that there exists today, too many who are not qualified to have other people to work for them. That is something that is very different here. . .if somebody wants to paint houses, they just need to have a ladder and a paintbrush and then go buy a little paint and they are in business. It was different than today. In many of the Scandinavian countries where the guild system still exists, you have to pass certain tests in order to be able to open your own business.

"Later I took to Norway; there I gained knowledge about design, then I started at Georg Jensen. I was lucky— I got my own shop in Georg Jensen and in a sense it was a complete blessing for me. Most of the pieces were made in the fifties. I was able to make the first piece from the sketch not even done as a drawing. I worked directly with the designers, and then my men had a model. Design is a wonderful word, but not always can everybody understand it because it spells out many things. It is not only beauty, it is function in a finished state and it must in a certain degree be makeable. So there are many things that go into it. In the end of course, men hope that it can be sold because that is part of design too.

"It seems that in this city (Copenhagen) art is extremely fortunate. Anybody that can design something, can rely on heavy advertisement to sell it. There doesn't even need to be a purpose for the thing. Things are changing as the consumer group becomes stronger and stronger.

"I had a wonderful experience that just happened recently. My washing machine broke down; I got a new washing machine — paid $350 for it and got it hooked up. And then, I could not start it. I checked everything and I still couldn't start it. And for a very simple reason — I am six feet tall and am not able to read a sentence that was painted on the washing machine– but painted on a small molding. The molding was sticking out about half an inch and from my eye height it was illegible. I couldn't see to read the button. So, I had to be on my knees. That was the fault of the designer. He should not even be involved in design. He could do something else. . .maybe do a simpler thing in life. But anyway, that was a little sidetrack.

"I have been working in the world of designers for a long time. In the fifties there was a show in the Museum of Modern Art and I made a great part of it. There were about 700 pieces and I made close to 200 — that is 80% of the holloware pieces. I did them in a period of 7-8 years. These pieces were not designed by me, rather I made them at the order of people since I came to the School for American Craftsmen in 1954. I have been there ever since. It has generally been a very rewarding job for I have had many of the fine silversmiths as students. It is a thing I have always dreamed about — as an artist, to give knowledge to people as people had given to me. I went to a show in Brockport University where there were in the neighborhood of about 23 artists participating. Of the silversmiths that were invited to the show, 2/3 of them were my students or students of my students — and I didn't know it. I don't think that anyone realized it at the time. So you can see it is very nice. However, let me tell you this, men realize they are getting older and it is maybe not the nicest thing in the world . . . not that this is bothering me.

"I am a strong believer that we have to have some kind of responsibility. Remember that to be a silversmith is one of the most important steps in man's history. If we go back to the world's beginning, as soon as man could do things and have a little knowledge, he started as a craftsman. Then he worked his way up. But everything he did, whether they were tools or to enrich himself for beauty — it was the metalsmith's craft that started everything. If that is going to die then the whole world is lost because we would not have out industry today or we wouldn't see the mass product being produced if there had not been somebody in an earlier state that started

Hans Christensen, chalice, sterling silver.

out with simple things. During the 1700's in America, at that time there were in between Boston and New York, more than 300 silversmiths that all produced useful things. I do realize at that time that you could not buy aluminium pots, electric frying pans or whatever we have today, but it was the craftsman that made it possible to make all the utilities that today we are mass producing.

"I don't want to take anything away from the industry. You cannot compete against them and you should not. There is a great need for the mass product. There are certain things we all need, but there is also a tremendous need for the most average person to be a little individual. He cannot get this from everything in the world. He has to get somebody to make it for him. Now there are many ways to do this. He can choose a certain degree of handmade clothing for an air to his appearance. He can buy a house, a square or rectangle or what he can afford and then he can buy certain pieces from the craftsmen to enrich that house. . . to give his own identity to that home. It is the craftsman that can do it, and I hope the silversmith will have great influence. It is why that I have for instance gone into education —to educate people to make these things. And if I'm not able to educate them all, I'm at least giving many people the opportunity to become aware that these things exist.

"There are two types of education. One kind is to educate the person to be a professional craftsman. And he should be professional and know what he's doing or the rest of the world will not have faith in him. But also, you have to educate people to realize that they have to pay a good bit more for a piece that is produced that way. It is very difficult to sell something that costs $400, especially when you realize that you could buy a big color television set for the same $400. But, it is very easy to persuade the customer if you are able to talk to them. For instance, sometime ago a man came into my shop and asked would I make something for him for $400. His daughter was going to be married. So, I said this is relatively easy. You can buy a color TV set for that price and be a very happy father . . . and three years from now that TV set will be thrown out . . . your wedding gift is someplace in a dump. But if you buy a little piece of silver from me — that little piece of silver will stay in her family and in the next generation and the next. People don't throw a piece of silver out. So in a way a piece of silver is the cheapest gift you can ever give away because the amount of years it is used makes the cost almost nothing. On the other hand, the TV set lasted only three years and then out it went. Many people today are trying to preserve the family and the way to do this is to have something going from generation to generation. Then they can say that this is my grandmother's or whoever's. I started several years ago to make bridal crowns. I make many of them and the idea is great because that one bridal crown will serve the family for many years. It is not only for one person, but several, maybe even many generations. We have to educate people to get used to this.

"I cannot keep on making bridal crowns; I have something else to do. I do not make anything for myself. I make and I strongly believe for other people. I hope I can make things that make them happy. In my long experience with customers I must say this, almost all come again the second time, I try to reach out to even more people because we have to reach out. It is necessary to get a great number of people interested in one way or another in the field we are believing in. The more people we can get into that, the more business there will be for us.

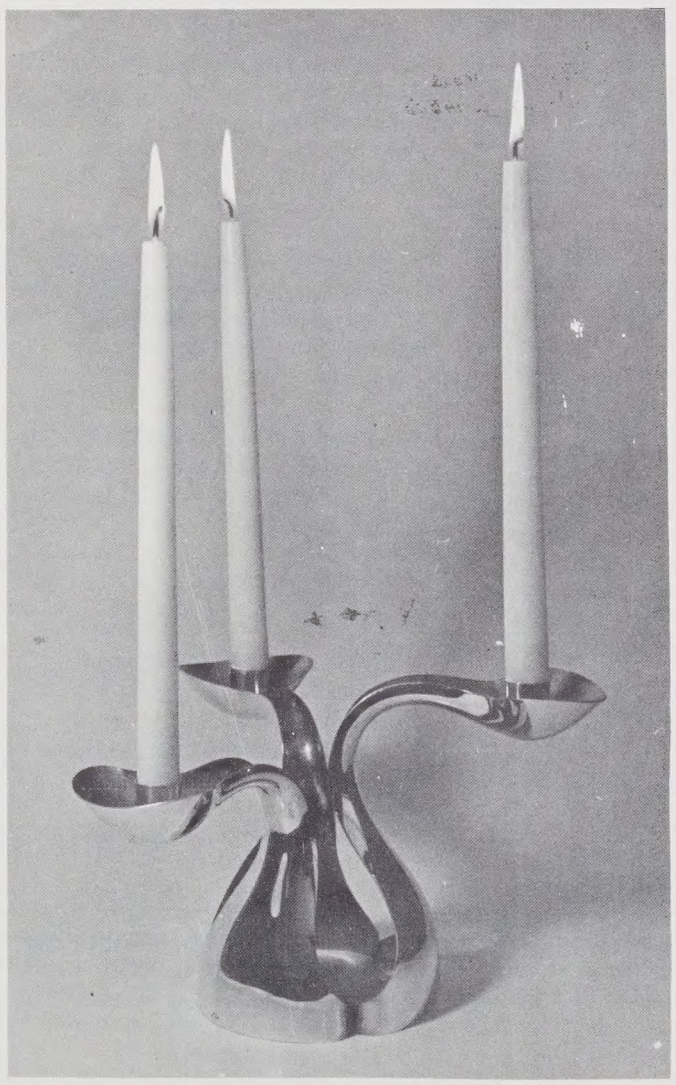
"I believe very strongly in holloware. I started out in 1939 so you can see that I have spent some time doing it. The last couple years I have been extremely busy. First, I have the school. I like teaching, especially teaching holloware. Besides this there is my shop. Each year I deliver a great number of pieces — big time-consuming pieces. This keeps me busy. Most of the pieces I'm making are relatively conservative. I do not want to play God and I make everything according to what customers ask for. However, I do try to sell as much as I can of my idea to them, but I also realize that whatever I make is not going to stay in my house. It is the customer's house that it will stay in and I try to fit my silver into their surroundings, their way of life and by doing so there is a good market. It is important that we make the pieces for our customers and not for ourselves.

"Here in the United States, we really go our own way. Many times we produce somthing that is not so much for the customer, but for ourselves. This is good too, by all means, but it doesn't reach out to the 200 million people who are out there. As a craftsman, men have certain responsibilities to reach these masses of people who are living off the mass product. These people are important and it is the job of the craftsman to keep them alive, rather than to just sit down and play.

"Myself, I've got all the work I want. I cannot take more customers. I have 20 to 30 customers a year. That means I'm booked down because I cannot make more than two to three pieces a month. It is just impossible. I agree with one thing. This is profit. Men cannot charge as much per hour with a thing that takes close to 100 hours to make. Now if you make a ring and you spend three hours or maybe four, okay; then you can almost charge what you want to because this is only four hours. But you cannot do this when you run up to 100 hours. This is what is dangerous for the craftsman. I always had certain standards because I don't give my things away. I try to get the most out of people I can, but on the other hand, I must be a little realistic. Craftsmen who do not realize this may give up in frustration; they may not get what they want out of it.

"Now I will agree to one thing. If men make nice jewelry — normal jewelry — jewelry to beautify a woman then for sure it is easier to get a living. There is no doubt about it. There are more occasions to buy something as a gift for a woman than to buy pieces of holloware.

"When I came here about 25 years ago, at that time the word HOLLOWARE was not even known across the world (of course, it was in the dictionary), but maybe only a handful of people knew it though. Today, most people do recognize it, and I feel that I have contributed to this in a small way."



Hans Christensen, candlestick holder, sterling silver.

BOOK REVIEW

by Chuck Evans

Basic Metal Finishing, J.A. von Fraunhofer, Chemical Publishing Co., Inc., N.Y., N.Y.

After taking a line from Shakespeare, "Here's metal more attractive," the author prefaces by outlining a list of characters for whom he wrote the book; metallurgists, maintenance engineers, students of materials sciences and technology and other engineers. Without specifically intending, the book provides a tremendous potential for the artist.

Being neither a chemist nor expert in electro-deposition, I cannot unequivocably testify to those areas of the book. Even with my limited experience, I found these areas informative and valuable. To those who have never explored these processes, I would recommend the book as a reference source along with practical experience.

In addition to a thorough presentation of a variety of plating techniques the author covers in detail a number of areas which I feel have great potential. The book is quite extensive (196 pages), and far beyond the scope of a brief review. A number of the processes discussed would at first glance seem strictly for the engineer but as we've found in the past, the technology is there to be used creatively.

Beyond the more familiar plating operations, the book outlines anodizing, diffusion coating, galvanizing and tin plating. For the more ambitious, a large section is on metallizing and sprayed metal coatings is given. Other areas on paint technology, polymerization, vitreous enamels, vacuum deposition, plastics and rubber is covered.

From this large bulk of technical data, our creative minds should certainly sift out the basis of some exciting applications.

If space allows, I've asked that the table of contents be provided.

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BOOK REVIEW

by Hannelore Gabriel

Basic Metal Finishing
J.A. von Fraunhofer
Chemical Publishing Co., Inc.
208 pages, illustrated, $16.50.

J.A. von Fraunhofer, professor at the University of London with a title as long as the way to Tipperary presents this book on numerous metal finishing techniques. Quoting from the publishers description: "The book provides a concise but balanced appraisal of metal finishing science. It should prove to be invaluable to metal finishers, paint technologists, corrosion scientists as well as those involved with the use, protection, and decorative treatment of metals."

Partial contents: Electrodeposition, Throwing Power and Adhesion of Electrodeposits, Role of the Electrolyte and the Anode in Electrodeposition, Alloy Deposition, Surface Treatments, Electrodeposition Equipment and Techniques, Testing of Electrodeposits, Nickel and Chromium Electrodeposition, Common Electrodeposition Processes, Anodizing, Sprayed Metal Coatings, Conversion Coatings, Paint Technology, Bibliography.

Since not specifically written for metalsmiths, I find this book rather technical, but for those of us who want to do deeper research on the subject it might be a valuable source.

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MEMBERS NEWS

Roger Armstrong has written a text/workbook entitled *Beginning Jewelry Notebook.*

John Baltrushunas will participate in "Metals In Motion" at the Craft Alliance Gallery in St. Louis, Mo., during the month of March.

Stephen Canneto exhibited at the Jaro Jewelry Galleries in New York from Oct. 18-31. He also had a two-week retrospective exhibition at the Lowe-Levinson Gallery in Miami Beach during November.

Michael Croft and Richard Helzer received Honorable Mentions in the Western Arts Foundation 1977 Visual Art Fellowship Programs.

Jaclyn Davidson, Peggy Johnson, Thomas Mann, Pahaka, Donald Pywell, Frances Welles and Ginny Whitney participated in the Philadelphia Craft Show during November.

Bob Ebendorf will be a juror at the National Metalsmiths Invitational at New Haven, CN.

Glen Gardner, Ulle Lepasaar, Frances Welles and Richard R. Devine exhibited at the Gallery of Contemporary Metalsmithing in Rochester, NY, during Nov. and Dec. It was the gallery's "First Jewelry & Precious Object Makers Exhibition".

Nilda Getty, Rena Koopman, Helen Shirk, and Yoshiko Yamamoto participated in The Elements Exhibit in New York City.

Randall Gunther has accepted a position as instructor in the Metal Arts Program at Humber College in Toronto.

William Harper exhibited about 60 pieces of enameled work at the Renwick Gallery in Nov. and Dec., and also gave a lecture on Dec. 16.

Ruth Laug is the recipient of the National Endowment for the Arts Fellowship for Craftsmen. She also had an article about herself in the last issue of *The Bead Journal*, entitled "Ruth P. Laug, Metalsmith".

Leslie Leupp exhibited at the University Art Gallery, Emporia State U., during Oct. and Nov.

Marcia Lewis had a solo-exhibit at the "Prairie House" in Springfield, IL. during November.

Robert Mitchell received a grant of $3,000 to study the silver electroforming cycles.

Eleanor Moty will show some of her jewelry and metal forms at the Craft Alliance Gallery (St. Louis, Mo.) during May.

Pahaka won an award ($250) for "Excellence in Craftsmanship" at the Philadelphia Craft Show. She also exhibited at the Works Craft Gallery in Philadelphia, PA, during the month of Dec.

Gene and Hiroko Pijanowski will give a workshop March 11-12 at the National Metalsmiths Invitational, New Haven, CN.

Mary Ann Scherr gave a lecture on Oct. 9 at the Philadelphia Museum of Art entitled "Update: Contemporary Body Adornment".

Mary Ann Scherr exhibited in the Philadelphia Craft Show, and at the Following Sea Gallery (Honolulu) and The Skidmore College Gallery (Saratoga Springs, NY) during Nov. She also gave lectures/workshops at the Philadelphia Museum of Art, the American Crafts Council National Conference, Skidmore College and the Chicago Art Institute. Recently the Ohio Arts Council honored her with the Distinguished Artist Award for Ohio.

Lynda Watson had a show in Oct. at San Diego State U. and a one-woman show at California State U. (Long Beach) also in Oct.

SOURCES

An excellent source for uncut stones and cabochons is Orbetz' Showcase, Box 855, Kansas City, MO, 64141. Items for sale include: jade and aventurine cabochons, belt buckles for 30x40 mm cabochons, Mexican mineral specimens, and rough amethyst crystals.

A new investment material for jewelry and small sculpture is now available known as Kerr Supervest. Working characteristics of it are similar to those of Satin Cast 20. When mixed at the same water/powder ratio as Satin Cast 20, Supervest forms a thicker slurry, minimizing possible water separation and potential water marking on patterns. It is available in 100 pound drums. Write: Kerr Manufacturing Co., 28200 Wick Rd., Romulus, MI. 48174.

RICHARD DEHR
1941-1977

Richard Dehr lost his life when his single-engine plane made an emergency crash landing at Van Nuys Airport on July 8, 1977. He was associate professor and chairman of the Art Department-Three Dimensional Media at California State University, Northridge. (contributed by the Southern California Designer-Crafts, Inc.)

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SPECIAL NOTE

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CORRECTION

On page 25, column 3, line 3,4 of the Oct. '77 issue, "Jewish Ceremonial Art: An Ancient Craft With New Horizons", Bernard Bernstein's sentence should read, "for sniffing, not cooking. The ritual involves inhaling the aroma of the spices, which symbolizes the sweetness of the Sabbath, which is about to end."

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**BACK ISSUES — Many people have requested back issues of GOLDDUST and the JOURNAL. Since most back issues are not available, xerox copies of the material will be sent upon request. Copies date from Aug. '75 and continue bi-monthly. Send $1.50 per copy (to cover duplicating and postage) to Mark Baldridge, Longwood College. Do not send cash; send check or money order made out to SNAG.

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